The Needs of the Poor in Infraestructure Privatization.
The Role of Universal Service Obligations. The Case of Argentina
Omar Chisari and Antonio Estache
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CEER
Centro de Estudios Económicos de la Regulación
Instituto de Economía, Universidad Argentina de la Empresa
Chile 1142, 1° piso
(1098) Buenos Aires, Argentina
Teléfono: 54-11-43797693
Fax: 54-11-43797588

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Resumen (español): El cambio estructural derivado de la privatización y regulación puede inducir una reconsideración de las regulaciones definidas al momento de iniciar el proceso privatizador. El cambio en la organización vertical del mercado y los tecnológicos, entre otros, cambian las reglas de formación de precios y de asignación de recursos. Las características d ela distribución personal y factorial del ingreso y la estructura social son también datos que influencian el diseño tarifario y la especificación de los planes de inversión necesarios así como la definición de las obligaciones de provisión de carácter social por parte de los prestadores. En general, las obligaciones sociales se refieren a los requerimientos de provisión de un conjunto de servicios bajo ciertos términos y condiciones los cuales en muchos casos en forma de transacciones involuntarias.

Abstract (english): The structural change derived from the privatization and regulation, may induce a reconsideration of the regulations defined when the privatization process was initiated at the beginning. There appear new markets stemming from the vertical deintegration, substantial technological changes are introduced and pricing and resource allocation rules are changed. The characteristics of personal and factorial income distribution and the social structure of the economy are also data which influence tariff design, the specification of the necessary investment plans and the definition of social supply obligation for the operators.Generally speaking, social obligations refer to the requirements of supplying a set of services under certain terms and conditions which in many cases to be able form of involuntary transactions.

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Pertenencia profesional de los autores:

Omar Chisari, Instituto de Economía, Universidad Argentina de la Empresa (UADE), Buenos Aires, Argentina.
Antonio Estache, Economic Development Institute, The World Bank, Washington DC, USA.

CEER
Centro de Estudios Económicos de la Regulación
Instituto de Economía, Universidad Argentina de la Empresa
Chile 1142, 1° piso
(1098) Buenos Aires, Argentina
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Fax: 54-11-43797588

# The Needs of the Poor in Infrastructure Privatization: The Role of Universal Service Obligations. The Case of Argentina[1].

Omar Chisari[2] *

Antonio Estache[3] *

## 1. Introduction

Even when a regulatory framework responds to the most generalized and solid theoretical recommendations, it always requires some sort of adjustment in accordance with the specificities of each economy, such as its natural resources, its legal standards and its geographical features.

The structural change in itself of the economy, derived from the privatization and regulation of the most important sectors of interindustrial linkeages, may induce a reconsideration of the regulations defined when the privatization process was initiated at the beginning. In fact, as a result of the privatizations there appear new markets stemming from the vertical deintegration, substantial technological changes are introduced and pricing and resource allocation rules are changed.

The characteristics of personal and factorial income distribution and the social structure of the economy are also data which influence tariff design, the specification of the necessary investment plans and the definition of social supply obligation for the operators.

Generally speaking, social obligations refer to the requirements of supplying a set of services under certain terms and conditions which in many cases to be able form of involuntary transactions. There follow examples of social duties:

- Services to pensioners (who are paid the minimum pension) and to the disabled in the way of a differentiated price from the rest of the population under equal service conditions;
- special procedures for regularizing the non-performing status of certain users;

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[2] Centro de Estudios Económicos de la Regulación (Instituto de Economía UADE). Chile 1142, 1er. Piso, 1098 Buenos Aires (Argentina). E-mail: chisari@criba.edu.ar

[3] Economic Development Institute (The World Bank)

- explicit subsidies to different consumer categories according to their geographical location (rural tariffs, spread-out markets), as well as to the specificities of their consumption curve (for example, electricity-intensive users) or of their income level.

There are several reasons why society may be interested in promoting the extension of a service to a greater number of consumers: fixed cost savings (natural monopoly), ethical justifications, positive externalities which are difficult to internalize or are not acknowledged by the consumers, network operation profits, and even political stability and state cohesion objectives.

Therefore, while access by citizens to basic telephony services is considered an entitlement that contributes to the normal development of modern societies, the availability of drinking water is placed within a category of "merit good" based on a positive externality (correlated to lower health expenses in society). The necessary expenditure for the services to be used by the disabled lies within the category of services rendered for ethical reasons.

However, this categorization is rarely clear and the regulator is normally faced with the dilemma of promoting consumption or hindering "free-riding". Public phones may be used to make emergency calls but also for personal calls with no sense of positive externality.

In the first Section of this paper we analyze the conceptual aspects of obligatory service. An attempt is made to define and classify the concepts of Obligatory Service and Universal Service Obligation. The basic difference from the standpoint of the use of intervention and regulation variables lies on the fact of whether the tariff is used or not to maximize the number of network participants. A new taxonomy is also suggested regarding unidirectional and bidirectional services, depending on whether the obligation is to provide the service to the company only, or whether it also includes the mandatory conection to users.

Moreover, this classification is important for determining the cases in which obligatory service is established due to insufficient demand or supply paucity. In general, it may be said that in Argentina the criterium of Obligatory Service was privileged up-to-now over the Universal Service. After several years of scarce investment in public utilities, it seemed reasonable to insist in an increase in supply and in a quality improvement, although currently the problems faced are in fact related to the payment capacity of present tariffs and of infrastructure charges by the poorest customers. In this way, to insist on obligatory service on the basis of a diagnosis of consumer streamlining, due to a lack of supply, may lead to plans of network expansion which aims at an elusive demand.

The second Section of the paper approaches the problem of regulating the Obligatory Service and the Universal Service Obligation in Argentina for Water and Sewerage, Telephony, Gas and Electricity.

The methodology used in Argentina went in the right direction; however some interesting lessons can be obtained from its functioning in practice. The privatization process was very wide and ambitious, and probably that is one of the reasons that explains the necessity of reconsidering specific regulations.

Available evidence in Argentina confirms the impressions that the attempt to connect poor neighborhoods to the networks (mainly in the case of Water and Sewerage), through billing minimum infrastructure and payment charges (even tariffs on use) encourages the re-location of the target customer group in more precarious and informal areas, in order to elude the

commitment to pay. It could go side-by-side with a persistent, non-desired dualization of some members of society.

The concept of tariff in itself should be reconsidered for the low-income user groups and for those experiencing a high level of unemployment. Poor customers face periods of unemployment which bring about variable and stochastic income and push them to discount the value of the disconnection and re-connection charges as well as the payments for arrears. Therefore, the "expected" level of the tariff is higher for the poor than for high-income-level users. These people may therefore prefer to self-exclude themselves from the network, taking into account that the connection charge entails an implicit contract for purchasing the first unit, bringing about too strong an inflexibility compared to the considerable fluctuation of their income. It is thus necessary to compare the normal tariff to the "expected" tariff.

It is found, however, that some of these method worked properly though within the environment of a multiplicity of social assitance plans.

The thid Section of the paper is devoted to summarize the main conclusions, examining Argentine experience with OS and USO from the point of view of microeconomics.

## Section I

### I.1. Definition and Objectives of the Obligatory Service and of the Universal Service Obligation (USO)

The reduced consumption of services may be construed as a problem stemming from:

i) a limited supply which rations consumers or,

ii) insufficient demand.

The first of these phenomena is related to the lack of interest of the company for supplying a market at an actual price while, in the second case, the private level of consumption is too low with respect to the desirable level from the social viewpoint.

This taxonomy is very useful when it comes to defining regulation tools; stimulating consumption (through tariff subsidies to customers) is no good in the first case since the failure does not come from the demand-side; however, in the second case, compulsory service may not be efficient since it acts on the supply-side.

International experience shows that regulators tackle scarce supply or lack of demand by imposing two conditions on the functioning of the markets: the Obligatory Service (OS) and the Universal Service Obligation (USO). The latter concept encompasses two different elements from the microeconomic standpoint (see Illustration 1) and includes the first option as a special case [4].

*Obligatory Service* refers to the fact that the company allows access to its services or to the consumption of the same to all users who wish to join the supply system at the present tariff. Although this duty normally lies with the supplier it may also be imposed on consumers.

It is worthwhile differentiating between the two types of obligatory service: the unidirectional service (obligation to serve...) when the supply-side is warned not to introduce rationing mechanisms on the demand (or not to discriminate due to price); and the bidirectional service according to which the demand-side cannot self-exclude from consumption due to reasons of price or of substitute availability (obligation to take service from...) (Table 1 and Illustration 2). Telephone, gas and electricity services are included in the first classification. Water and sanitation are included in the second group due to health and environmental protection reasons. However, in many cases the rule of obligatory connection is also related to financing the extension of the network[5].

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[4] Part of the international experience is sumamrized in ITU(1994), Wellenius, et. al (1994) and OECD, (1995).

[5] This is clear when the obligation of connection is applied even in the cases when there is no dwelling, for example, on empty plots of land.

The Obligatory Unidirectional Service establishes no implicit social preference principle regarding use of the service or consumption level. It limits the company's action but does not impose an involuntary transaction on the consumer. It does prevent discrimination of consumers and their rationing which the company could be tempted to do when facing maximum prices or different production costs, for example, bearing in mind the location of the consumers. The Obligatory Service thus establishes involuntary transactions on the suppliers and, in almost all cases, imposes a minimum pace for expansion of the infrastructure to ensure it goes side-by-side with growth in demand. (this is related to the method of computing the tariff; generally the contract establishes that the tariff is approximatly the averrage cost. Without OS the company would serve only those low-cost customers).

Therefore, obligatory service means that any agent which expresses interest in the service shall have the possibility of gaining access to service provision with no condition other that the payment of the actual tariff, even if supply is anti-economical. In general, this obligation is not only defined regarding the number of present consumers but also that of potential consumers, thus forcing the company to invest.

Universal Service (or Universality)[6] encompasses the idea of giving all community members the possibility of gaining access to product consumption by paying a sufficiently low tariff.

While under Obligatory Service, the production capacity is enhanced to allow access at the actual tariffs (demand must be faced), adherence to a Universal Service principle sets forth a different target: that of giving all members of the community the possibility of reaching an "acceptable" consumption level (Table 2 and Illustration 3).

The USO permits the adjustment of the tariff until a voluntary service consumption similar to what is socially desirable is obtained. Of course, this consumption would be unreachable without investment plans compatible with growth in demand, therefore, USO includes OS.

In some industries, universality may include both access as well as use (for reasons of social order or because of its indispensable nature). In others, for example, when the service has possible substitutes, the universality criterion only refers to access and allows the agent to decide on the level of use according to prices in force.

We have implicitly admitted the traditional outlook on the relationship between a natural monopoly and obligatory service: OS and USO are conditions imposed on pre-existent natural monopolies. Anyhow, Mueller (1997) inverts causality and gives historical evidence. On some occasions the natural monopoly would be a way to ensure Universal Service; the example he uses refers to telecommunications in the U.S.A. because the concentration of the service in only one company had the purpose of ensuring all users to be in contact with the rest of the community, which is not ensured should there be many operators using non-compatible technologies.

### I.2. Social benefits and obligatory service.

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[6] OFTEL (1995) (1997); Analysys (1995); Muller (1997); Graham, (1995)

Mueller's example also illustrates that in many cases USO derives from the assertion that there are social gains due to the access and use of the services supplied by network.

In general, it is expected that through USO it will be possible to enjoy implicit positive externalities which the generalized use of a service entails for society.

The organization of the industry may be regaded as a mechanism to reach the objective. Universality is almost always ensured by a sufficiently low tariff so that there is a minimum (self) exclusion of consumers, and the use of the service on the basis of the common network reaches a socially optimum level.

USO is a condition closely related to pricing and tariff structures by regulation which aims at reaching, at least, a minimum use of the service for consumers (particularly, the low-income sector) or at disseminating use among all those possible (leaving aside substitutes).

Moreover, USO can be considered as the "dual" problem of cross-subsidization.

From this viewpoint it may be said that USO presupposes, besides the Obligatory Service, a certain degree of insufficient demand and opens the possibility to changes in the tariff structure; on the other hand, the Obligatory Service -a particular case of USO- is rather related to a potential supply restriction.

As is to be expected, USO is not a criterion applied with equal intensity in all sectors; it depends on the social valuation of the product or services and whether there are or not any substitutes.

Therefore, the supply of water and sewers is highly indispensable and there are less options for its use that are not equally indispensable[7]*;* however, this condition is not always present. In telecommunications, the use of the service may have different destinations, all highly valuable from a private standpoint but only a few valuable from a social viewpoint.

Thus there clearly appears one of the dilemmas of regulation. The use of the service shall be favoured, encouraging consumption and access and, at the same time, restraining free-riding and misuse (See Table 3).

### I.3. Implementation costs of Obligatory Service programs.

[7] It is necessary to clarify that the above statement is true for certain levels of consumption because there are cases in which the consumers utilize water for uses that are not of high social importance (pools, gardens, among others).

Implementation costs and the capacity of handling free-riding should be taken into account when choosing the consumption subsidy method and in the implementation of well-meaning mechanisms to encourage access and use.

Cost effectiveness and success of the transfer mechanism, organized through a private or public system, depend on the available technology to handle opportunism[8].

It is normally sustained that charity is more subject to "opportunist" assaults if it is granted by private agents with no fiscalization and enforcement capacity. From this point of view, a re-distribution system organized on the basis of the public sector would not be so weak in handling free-riding.

However, if the public sector resorts to subsidizing consumption there is a risk of facing a very high deficit and encountering remarkable free-riding, as illustrated in Argentina by the tariff subsidy for consumption of public utility services granted to the pensioners earning minimum pensions.

These pensioners were granted a special tariff reduction which was compensated with funds collected by the social security. In this way, service suppliers had no reduction in their income but neither did they have any incentive to ensure that the use of the service was kept to the target group.

In the case of some of the subsidized services, for instance telephony and gas, many of the pensioners earning a minimum pension showed very high levels of consumption -which indicated that there were displacements of the use in households of relatives or friends towards the pensioners homes in order to gain access to lower tariffs.

The effect of the above was to increase the total amount of subsidies, exerting pressure on the public finances.

The proposed solution was to settle a minimum direct subsidy, a fixed amount for <u>all</u> pensioners (earning a minimum pension) whether or not they were connected to the network. This mechanism solves the dilemma of profit distribution among homogeneous pensioners but does not ensure use of the services at a similar level to that of "the socially acceptable minimum consumption level" (neither does it ensure connection to the network!). Although the change in modality took place recently, there have been already registered cases of pensioners who use the amount received for expenses other than paying for public utility services, and thus do not foot their bills on time.

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[8] Harberger (1978) highlights the fact that the families do not use transfers in cash to help their members and free-riding is prevented by making paternalistic allocations of packages or goods. It is a different mechanism to that recommended by the economic theory when there are no externalities, information asymmetries and enforcement costs.

Another difficulty of tariff reduction or subsidies is that those eligible are not necessarily low-income consumers. For example, if it is oriented to minimum pension earners, no account is taken of the other income those people can have, for instance, from real estate leasing.

It must be noted that it is only possible to encourage the use of certain products or services by those who have access to the service networks. From this viewpoint, the lower tariffs for the pensioners connected to the system are partly financed -through taxes- by pensioners in the same conditions or poorer still, who are not seaved by the network.

This is the trade-off that arises from having a proxy to identify the target group, versus the cost of not implementing the program at all. It is worth noting that the definition of "socially acceptable minimum consumption standard" is not only conventional but is also probably a concept subject to evolution and change throughout time[9]

Moreover, there is a potential danger of misallocation of funds if their are no well-defined prizes and penalties regarding destination of the subsidies. For example, if a family's income is improved, that family will not necessarily use the money to gain access to the water and sewerage network since they will evaluate their own private benefit; however, there are social gains concerning generalized access to drinking water and sewerage (by reducing disease-spreading sources).

The fact that the universal service obligation be imposed on a supplier may be linked to the financing costs of these projects (a more subtle reason) which, from the public sector viewpoint, may entail a much higher capital cost than the privatized companies may obtain, financing expansion plans on the basis of regularly available cash.

However, the gains derived from "generalized access" do not have to be strictly social. Provided the company supplying the service may capitalize (internalize) the donation made to consumers, it may be interested in promoting consumption among groups which perhaps do not have access there to. That is the case of the gains due to the network's extension to many users as, for instance, in telephone services: private consumers are willing to pay more to participate in a denser network (anyhow, a one-telephone network is worth nothing). It is also the case of the gains derived from advertising: the image of the company improves if it has some sort of social aid plans, for instance, to favour low-income pensioners. The problem is that the company may focus its re-distribution efforts on the more visible groups which are not necessarily the neediest.

On the other hand, maybe the companies are imposed the task of identifying the target group for which they are not prepared or for which they lack information from local or federal authorities. In the case of Argentina, evidence indicates that the international operators are companies not quite used to facing collection problems as well as problems in accessing the poor neighbourhoods.

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[9] For example, to what extent would it be acceptable to restrict universal service to voice telephony if it were necessary to send a fax in order to submit a job application.

**I.4. Justification for the Obligatory Service.**

Why is it necessary to include an Obligatory Service condition? The following are the most obvious possibilities:

a) Supply costs are very high due to the presence of fixed costs or indivisibilities.

The first reason is that although the service may be valuable from the social viewpoint, the company has no incentives to operate in the market.

The tariff may be too low with respect to total costs (marginal). Indivisibility in the size of the plants and the significant fixed costs are surely part of the main causes of this phenomenon.

In this case the operator has no incentives to provide the service although it would be socially desirable that it did so, taking into account the users' surplus and the social benefits.

b) Sunk Costs and risk on the rate-off-return.

The above is not necessarily the only reason. There may exist the fear that once the capital has been sunk, the tariffs will not be paid, or that regulation may force the company to provide the service at a price which does not enable recovery of invested capital plus a reasonable profit (regulatory risk), or at a very low tariff (for example, when special programs are drawn up for pensioners or poor families).

c) Tariffs can not be discriminated.

Although indivisibility is one of the reasons for a company to decide not to supply a market, the impossibility of discriminating prices is almost always a necessary condition that goes side-by-side with it.

Illustration 4 shows an example (taken from Varian is text book (1992). At PR the company would supply the demand of rich users-DR and at the PP price it would meet the demand of poor customers-DP. However, if the company cannot discriminate maybe it would choose to supply only the rich, at PI.

d) Waiting until the size of the market justifies investment.

Reasoning by analogy with "peak-load-pricing" theory, to increase the capacity of a company entails offsetting the profits of building a plant at present to face a progressive growth in demand, vis-à-vis the loss of social surplus by rationing users, postponing investment plans until there is a sufficient amount of unmet demand.

The first solution is more costly in terms of idle capital; in the second case, consumers are rationed and their well-being is reduced (bringing down the consumers' surplus). Of course it would be possible to charge new consumers -marginal in terms of their joining the market- very high prices at first so as to cover capital costs; but if price discrimination is not possible maybe the optimal solution would be to postpone investment plans.

Illustration 5 gives an example. The horizontal line c+f represents the operational costs of the plant already installed (f are those costs which enable the recovery of capital when distributed

among all the units the plant may produce). The maximum capacity of the first installation is given by A (the minimum size of the plant); while the demand curve keeps steady in the A - B segment, it is not deemed convenient to extend capacity (up to 2A, given the indivisibility factor) at the currently regulated price.

It is to be expected that profits will be even higher should the extension be postponed if it is considered that the consumers to be added to the service have lower reserve prices or cannot pay the regulated prices during the current period, as may happen if the water or telephone networks would be extended to the poorest neighbourhoods.

e) Even within a competitive framework, some consumers may be excluded from the service.

The tariff structure of the company should allow the sustainment of the service. On the other hand, it is normal to note differences between the users when compared according to their income.

Competition in the market could lead the price to its long-term level, a stage at which costs are at their minimum and where efficieny is highest; but it could mean high enough prices so as to exclude the lower-income consumers[10].

This situation is shown in Illustration 6 in which $P_{comp}$ is a price which excludes consumer 1. Therefore, the level of service coverage may not coincide with the desired level from the regulator's and the society's viewpoint, thus leading to specifying a lower tariff so that more agents may gain access to the service network. This is the reason why the universality criterion is linked to a pricing policy, because in this way it is possible to include new consumers[11].

It must be noted that if the tariff is too high, the agents' exclusion is voluntary: they do not desire the service although it would be socially convenient for them to join the network.

This is why USO is also related to the tariff.

### I.5. Unemployment, income distribution and universal service.

When self-exclusion is harmful for society there arises a concern for service universality. Self-exclusion from the sanitary services has an impact on the economy's productivity and on hospital costs -leaving aside other ethical appreciations and externality arguments; self-exclusion from the telephone services brings down the value of the network -it is even valuable for the

[10]The regulator may be sure that the technological change will bring down company costs and that the market itself would minimize exclusion; however, it may consider that the time the process would take is too long and thus may prefer to include the universality clause. An example could be the recent regulation in the U.S.A. which included Internet as a universal service so as to facilitate its expansion among users, despite the constant technological change that continuously reduces its price.

[11] An interesting point here is how to share common costs in markets segmented between the "poor" and the "rich" which may lead to more complex definitions of cross-subsidies as may be seen in the section on financing.

agents to use services which are normally not included in the universality objective, for example, that they have a fax; self-exclusion from the electricity network -and to a lesser extent from the gas network- reduces service quality in terms of safety and stability.

International evidence seems to indicate that the main cause of self-exclusion is the tariff level.

In this paper it was already mentioned that the universal service may be bi-directional. The obligatory service may also be provided on the same base, imposing the condition -like in some cases in Argentina- of compulsory adherence for both the demand and supply sides of the market.

It thus once again becomes a potentially involuntary transaction since a low-income agent may prefer not to connect to the network and instead use a substitute.

This is the case noted in Argentina regarding the supply of services to shantytowns and poor neighbourhoods. The building of the network is a problem for the poor people not only if they are forced to pay for the infrastructure but are also obliged to pay a fixed charge which entails a financial and economic commitment they cannot afford.

From the standpoint of the poor users, fixed charges mean the purchase of products committed beforehand and this exerts different pressures on them. They are forced ex-ante to spend less on other products or must increase their labour-supply beyond what they would have desired if the service could be acquired on the basis of its divisibility.

In some cases, a high percentage of the neighbours may decide to voluntarily adhere to the network; this diminishes the supply of available substitutes and seriously affects those who cannot pay. The only alternative the user has is to "escape" from the network, by settling down in non-serviced places. This phenomenon has been recorded in Argentina. Moreover, the provision of services has been accompanied by setting a legal status to the occupation of fiscal lands, and therefore has increased the amount of taxes (mainly municipal).

The geographical pattern of demand may be thus considered stochastic but well-determined as a result of an optimization plan from the poor user's viewpoint. This aleatory nature may overburden the costs of the suppliers, that would be pursuing a mobile target.

In terms of the taxonomy proposed at the beginning of this paper, the obligatory service imposed on the suppliers -to extend the network to poor neighbourhoods, away from high-density, high-income centres- may be inefficient because the consumers are not willing to use the service (lack of demand due to low income).

It must be noted that the legal demand to join the network -for example, if it runs in front of the door of a dwelling- or the social demand to do so -because others have done so and there are no longer any substitutes- may favour a progressive process of “dualization”. The poor "fleeing" from efficiently provided services.

However, at the social level, the substitute may be more or less costly than the network service (in water supply and sewerage, the danger of disease spreading, for instance) or else, the self-exclusion of potential customers may reduce the financing of the network itself. Thus a network may be economically feasible for N consumers but not for N-1; the obligatory nature of the transaction (a command-and-control remedy) would then arise from the social benefits.

Vis-à-vis the dilemma of accepting self-exclusion or imposing the transaction, of course, the obligatory service may become a universal service, by accepting a specific tariff reduction for all or for some users.

The fact of openly admitting the possibility of reducing tariffs for some users paves the way for free-riding, even in the case of certain clearly identifiable users (such as the pensioners).

Bringing down tariffs -particularly access tariffs- endangers the sustainability of the suppliers or sets in the need to exert pressure on public finances in order to somehow subsidize the service.

The duration of high unemployment levels creates the problem of how to deal with the unemployed within the general definition of Universal Service and Obligatory Service. The alternative is to consider that the problem does not exist or that it is temporary, that market forces will correct the imbalance, and not to define any criterion. That entails accepting that the regulators may well act on the basis of surprise and improvisation.

Undoubtedly, the problem of unemployment and the variable income pattern may be incumbent on employment offices or specific policy bureaux as far as the labour market is concerned; but that in itself entails having chosen a particular method.

If an agent faces variable, low-income patterns, he/she will have problems with the fixed and indivisible part of the tariff paid. Non-lineal tariff patterns are good solutions for achieving allocative efficiency but -as is known to all of us- it may create problems in the number of agents willing to gain access to the service. It is a more serious problem still if the agent is forced to join the network.

This argument is relevant in the case of Argentina. The economy went through and is still facing high levels of unemployment, unusual levels compared to the mean for the seventies and eighties. While the normal rate stood at around 6%, by 1993 unemployment had reached 9.3% and went up to around 18% after the "Tequila" effect (end of 1994 and beginning of 1995).

At first, unemployment was basically due to an increased participation rate because of the improvement of real wages derived from the stabilization plan (known as the Convertibility Plan since it set a 1:1 peso/dollar ratio) and to frictional reasons (substitution of public by private employment after the privatizations). Thereafter, unemployment rates responded more to financial shocks on firms and on labour supply, and to the substitution of capital labour. On the other hand, the progressive extension of the networks, following the established expansion plans set forth in the privatization tender specifications, has extended the services to areas which entail higher supply costs, where poorer users live and relatively high unemployment rates may be found.

In fact, the unemployment rate jumped to a persistently high level which more harshly affected the low-income, low-skilled workers. These workers not only have low incomes but they also have cyclically variable incomes.

Tables 3 and 4, show the result of “naive” estimates of “tariff-preasure”. Average tariffs were considered by decile. Notice the huge level of the rate of unemployment for poorest deciles and the significant proportion of total income when all services are provided simultaneously (thought financed). It can be seen too that financial commintments are not so significant when infraestructure payments and the connection charge are left aside (they amount to less than 7% of

total income of a family belonging to the poorest decile). The importance of computing the expected tariff is also shown there.

Thus there appears the need to better define the tariff structure under unemployment (see Marchand et.al. (1989) and Bös (1994)).

Infrastructure charges and the fixed charges, in particular, may not be feasible for poor users, which means they would prefer the resort to substitutes that they may purchase on a "spot market" basis; it must be noted that, as already pointed out, payment of the infrastructure and themselves fixed cahrges mean a contract of use.

It also creates financial problems since, although a customer may normally pay for the charge, he/she may temporarily have a low-income. Some of the gas distributors have envisaged mechanisms to facilitate access to credit for users who cannot afford the whole of the infrastructure charge; however, they have not contemplated the unemployed -or those who work in the informal sector- since it is necessary to have a statement of earnings in order to be granted a loan. They would rather use more expensive substitutes than being served throught the network with a contract (a fact, paying a fixed charge for the option to use).

The fixed charge or connection charges (or, in other words, the price of the first unit) also brings about problems for poor users. It is a payment commitment -once again, a contract- which may be costly when faced with certain unfavorable conditions. That is to say, that the most efficient solution from a social viewpoint regarding "expected values" is unreachable, if specific cases within the distribution of probabilities are taken into account.

Penalties for payment in arrears and re-connection charges also play an important role for those users with variable, stochastic incomes. In fact, the interest rates charged and the amount those excluded from the service due to lack of payment have to disburse to rejoin the service are surely significant when it comes to deciding whether to enter the network or not; also when that decision is voluntary (unidirectional service), there may still be social reasons or externalities which may favour the maximization of the number of users connected to the system (telephony, for example).

The evidence available for Argentina also seems to sustain the validity of this viewpoint. A stricter respect for payment terms has been noted among the poor users than among the middle and high-income sectors. The danger of being disconnected and the increase in the penalty at an exponential rate (the interest rate) are a sufficiently high incentive (penalty) for the low-income agent to respect the terms, but it is also a potential threshold for them to eventually try and avoid the network (moving to non-serviced areas).

The poor customers may self-exclude themselves because they face an expected tariff ETP (see Illustration 7) which is higher than the normal tariff T, when taking into account periods of unemployment or low income in which the user will incur in additional expenses to maintain the service -due to lack of payment of the bill. Richer customers, on the other land, as not see a significant gap between both tariffs (ETR = T). An estimate of the impact of fixed charges and of penalties for arreaesare presented in Tables 4 and 5. It is assumed that all infrastructure services are connected at the same time to the households decile and that due to unemployment and cyclical earnings agents are disconnted and reconnected at least once in the year.

If this fact is acknowledged by the operator, the tariff policy for fixing connection or re-connection charges which are too high, or excessively costly charges for arrears, may be an implicit strategy to discourage demand and increase not the normal tariff, but instead the "expected value" of the tariff for someone who has cyclical income patters.

### I.6. Costs and benefits of the Universal Service Obligation.

Besides the distributive aims that a regulator may pursue by imposing a Universal Service Obligation, it is worth pointing out other objectives.

The following listing sets forth a summary of these advantages and their pertinent costs (see Table 6).

The gains may be the following:

- from an **ethical** viewpoint, when the well-being or consumption level of certain services is an argument of other agents' utility functions,
- derived from **externalities**, such as social gains by reducing diseases due to the use of drinking water and centralized sewers,
- **network gains** (e.g. in telephony and electricity) by increasing the number of individuals with which it is possible to communicate or by improving the system's stability,
- **supplementary gains for improving access to the market economy**, such as those obtained by bringing the unemployed closer to new work opportunities, facilitating their access to the telephone network, or by building roads,
- **bringing down expenditure on costly substitutes**, for example, increasing the real salary if natural gas from the network is consumed instead of bottled gas.
- **extending the network to consumers which are not profitable nowadays but will be so in the future**,
- **leaving open the option of using the network**, for example, when consumers have the network nearby and may resort to it in case of an emergency,
- **advertisement profits for the supplier**, when the special plans are announced and construed as a social contribution,
- economies of scale or cost subadditivity (pay for fixed costs the least times possible).

On the other hand, costs include:

- **drop in the privatization price**, if obligatory service is explicitly stated, and therefore determining an implicit transfer from present customers to future generations,
- **allocative costs**, if expenses are paid from general revenue with higher distortive taxes,
- **identification and monitoring costs**, of the agents that qualify to be included in the system, and control costs to ensure that there is no leaking (re-sale of the service or opportunistic hooking onto the network),

- **cream-skimming**, which endangers the natural monopoly's sustainability (inter-generational transfer in favour of those alive at present) derived from the obligation of providing services below cost level, financing this with higher prices in other markets,
- opportunity costs of capital and costs derived from accelerating investment plans to accompany demand growth, originated in the pressure exerted on inputs markets with low supply elasticity,
- costs derived from deciding to anticipate connections nowadays in a context of technological progress which will bring down costs in the future.

When the service is not universally provided by the company in a voluntary manner, part of the consumers are rationed. This has spill-over effects on other markets: on those of the substitute products and on the labour market, just to mention the most important ones.

There are thus consequences on resource allocation within the economy. If a family does not have access to the consumption of products or services, they may probably resort to more expensive substitutes. The extension of the networks improves living standards, increases real wages and improves agents' access capacity to products consumed with that service. For example, the building of a road will allow rural populations or inhabitants from the outskirts of a metropolitan area to gain access to the labour markets and encourages the participation of additional family members.

**I.7. Financing of USO.**

On the basis of the analysis carried out above, it appears that the universal service obligation entails providing the service at a lower price than the company would be willing to apply if it were a monopoly or even if it developed its activities in a competitive market. USO determines that the consumers whose supply is more costly than the average, pay the same price as the rest.

The regulated price will necessarily be below those costs for this group. Something similar happens -although for different reasons- with the lower-income sectors. In this case the price could be above their payment capacity independent of the market structure in which the company or companies operate.

In both cases, USO entails facing costs[12]. ¿How can the supply of services to these consumers be financed at regulated prices?.

In principle, there are four financing systems for the Universal Service Obligation:

- Cross-subsidies among consumers and/or among products.
- Direct transfers either to consumers or through company disbursements.
- Setting-up of a fund.
- Extension of the concession.

Notice, however that here we have implicity two categories of subsidies : cross-subsidies or direct subsidies.

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[12] If the prices move away from the opportunity costs of the resources used in production - marginal costs- there also appears a social cost that may not be internalized by the company but will be paid by society as a whole. See Burns (1995) for an introduction to these issues in the framework of discriminatory prices.

a) Cross-subsidies.

The use of cross-subsidies is a result of the impossibility of the regulator to fix different tariffs according to production costs (Varian, 1989). Discrimination is rejected for three reasons.

The first is associated to the equality the regulator seeks to impose on prices and supply of the service in general. As will be seen further on, in the case of Gas in the Patagonia region of Argentina, correction of the tariff subsidy with an increasing bloc mechanism -to better target the subsidy only at poor users- brought about reactions and claims of the users who protested against inequality and argued there were mistakes in the verification of bi-monthly consumption, which placed them in the higher tariff category.

The second reason is linked to how information is distributed between the regulator and the regulated company. If the latter argues that the supply costs are different for one group or another, the necessary information to know the real supply costs and to correctly fix prices may be out of the regulator's reach. If there are not very exact estimates of these costs, it may be preferable -as far as regulation is concerned- to fix a single price. One of the current problems in fixing telephone tariffs for the rural areas in Argentina is to define exactly where the urban service ends and the rural service starts (the latter being more expensive).

The third reason is related to specific social objectives: the phenomenon of localization since the higher prices in rural areas may discourage the settlement of people in these districts thus affecting society in other aspects, which it is not probably willing to waive (defense and national security issues, among others)[13].

The latter reason admits -at least theoretically- alternative solutions, since direct transfers may be generated to those who settle down in the most unfavorable or far away urban centers, without affecting relative prices.

It is possible to think that the company's activity could be subsidized there, where it is not profitable, but this would only be efficient if the exact amount of the subsidy could be calculated without affecting the company's incentives and moreover, covering losses. This scenario presupposes good knowledge by the regulator regarding production costs, which gives us an idea of how important the above-mentioned second reason is.

Anyhow, cross-subsidies entail costs. The main ones refer to efficiency because relative prices move away from relative costs (marginal costs).

In order to minimize these costs, the regulator must decide how to define these subsidies: either among consumers or among services. However, this last possibility is not open to all industries or at least not to the same extent. For example, in telecommunications, the subsidy may be defined in both directions since this sector offers a range of products which may be affected by this policy. The fixed charge may be brought down by adding a surcharge for use, for example, if difficulty of access is the USO regulatory objective. Another example, is basic telephony which could be cheaper if financed with contributions from other services not considered basic services. Normally, the latter possibility does not appear in other industries where there is not a many-sided supply. Therefore, in water, the cross-subsidy could be

[13] It must be recalled that this debate already took place when the issue of telephone tariffs was discussed, regarding the possible difference there would be between consumers living in the interior with respect to the more densely populated Buenos Aires Metropolitan Area (See: Instituto de Economía UADE, 1996).

implemented among consumers or at the most between the connection and consumption charge; since this service is indispensable, it would be difficult to finance the cross-subsidy through consumption, in favour of access.

b) Financing Fund.

This system is, in fact, a way of financing transfers such as those discussed above. The fund consists of a contribution from the different market operators towards those who have the universal service obligation. That is to say, that it is a mechanism applicable to situations in which entering the industry is consented, but in which USO is only compulsory for one operator.

Different options have been proposed for collecting fund resources although the main source is to levy taxes on the sales to those entering the service, charges for granting licenses -a process which may be competitive and is known as auctioning- or, finally, inter-connection charges if the operator responsible for USO is the owner of a network that the rest must use.

In the same way as direct transfers to consumers are not applicable, due to the paucity of information handled by the operators regarding the specific characteristics of each agent, the last two systems mentioned have other deficiencies that may affect the functioning of the markets.

On the one hand, the acceptance of cross-subsidies among consumers or among services may affect the dynamics of the competition process by encouraging less efficient operators in more profitable segments (cream skimming,) which finance the less profitable ones. Likewise, the fact of imposing a fund with inadequate collection mechanisms may also affect the competition process since it may impose payment conditions which hinder long-term incentives.

c) Direct transfers.

From the point of view of economic efficiency, direct transfer to the consumers is the best option since relative prices of the economy are not altered. Each one pays the pertinent price.

However, this system has two inconveniences which make it impracticable. Firstly, it is difficult for the regulator to know the exact payment capacity of each agent or the real production cost of the company for each location so it is therefore difficult to make an efficient transfer calculation. This is an "adverse selection" problem.

The regulator also faces another inconvenience, that of ensuring that those who receive a transfer in fact spend it on the service for which it was conceived. It is a moral hazard problem.

The second inconvenience refers to implementation, since transfers to the consumer entail that he/she must pay the real supply price. By definition, that price is different to that of the rest of the consumers. These price differences affect public opinion that does not accept any discrimination; therefore, it is difficult to put it into practice, even by using a compensation system.

Two changes have been proposed to solve this issue: that the transfer be received by the company and that the consumers not be discriminated by prices. Although this system solves the moral hazrd problems, because consumers do not receive any extra income that they can use for other purposes, it does not eliminate adverse selection, since the problem of identifying who really need these transfers still remains. Despite the above, it has been used in different regulated sectors in Argentina (electricity, gas and water) for pensioners and the Patagonia region consumers.

Of course, financing must then come from the collection of global public resources. Therefore, other publicly supplied products and services must be sacrificed and taxes (distortive ones) or the financial exposure (indebtedness) of the public sector must be increased. In fact, the Argentine public sector started to accumulate a heavy debt burden with operators, through the social security system.

d) Extension of the concession and coverage.

Lastly, the regulatory experience shows that there exist other possibilities which although are not strictly financing sources, do provide means of alternative funding.

The first, is the extension of the concession through which the company enhances its monopolic condition on the basis of the exclusivity granted for its operation in the market; this mechanism allows the company to continue financing -with its own resources- essential investments for complying with the USO.

This mechanism was proposed in Argentina in order to cover the collection deficit regarding infrastructure charges, as the extension works reach poorer neighborhoods farther and farther away from the densely populated districts.

Another example is coverage extension; through this policy the regulator grants additional financing sources in compensation for the universal service obligation. If the company is obliged to provide services to non-profitable community sectors, the regulator offers to extend coverage so as to include consumers with respect to which cross-subsidies may be charged. However, here we have a case of cross-subsidies between different generations.

In other words, extension of the area is a mechanism through which the population base for the collection of subsidies that finance the universal service obligation is expanded. If the extension were not feasible because there are no geographical possibilities of expansion, there is the alternative of "reserving" certain parts of the market to the operator in charge of providing USO, although this policy is difficult to implement because the consumers located in the reserved area would not be benefitted by competition.

## I.8. The problem of defining universal service in multiproduct industries.

In many industries, such as telephony, different services are provided thus bringing about the problem of defining the exact scope of the universal service criterion. For example, it could be decided that oral transmission, emergency calls, telephone directories and telephones for the disabled be considered a basket of products provided within the definition of universal service. This would leave aside other special services (fax, Internet, point to point communications, among many others), the supply of which is effected according to different market rules or regulations.

But this is not the only possible distinction. It is known that this industry provides its services through networks and that, due to the technological and cost characteristics, the companies charge different prices for access or use of those products. It could be understood that the price fixed for the former is a charge (generally a fixed charge) for connection, through which it is possible to consume variable amounts of products or services.

Following this reasoning, it is possible to identify two different types of demand with diverse elasticity too, being access demand normally less than use demand as shown by some

studies (NERA 1994). Anyhow, the most important factor of this differentiation between access and use is that it encompasses a differentiation in markets. Therefore, it is possible to say that there will be different economic effects in relation to the universal service obligation, when applied to one and another.

In fact, USO is in essence an ad hoc mechanism that may act on the prices, driving them apart from their strict allocative efficiency, with an economic impact which may be divided into two parts: a distributive one (among consumers) and an allocative one in each of the markets. In principle, there are little allocative inefficiencies in those markets where demand is less elastic; therefore said cost is lower when such prices are affected.[14]

In this respect: should the universal service obligation be applied to access (provision of the network), to use by the consumers or to both markets? Where is the social cost lower regarding USO implementation? This debate is essential because therefrom can be derived the economic impact that USO would have as well as the possible financing methods.[15]

Let's consider telephony once again. Its use is associated to the telephone service operation and represents the branch of the industry where competition is more rapidly developed, at least in relation to the provision of the network (where the access charge arises from). Therefore, it is to be expected that if a lower price than the competitive market price is sought, the efficiency of the market is being affected because it is also to be expected that, in the long run, the production level will be provided at socially optimum costs. The international experience is valid here too, since it evidences more rapid and pronounced price decreases in this market. Side-by-side with this competition potentiality of the service's operation is the fact that use demand elasticity tends to be greater than that of access; therefore, efficiency costs could be significant if the prices move away from the long-term marginal costs. Regarding access, it moves slightly away from the fully competitive market, an issue which has long been discussed since the companies that provide it have a certain market power. This analysis suggests that imposing the universal service obligation would have less distortive effects if it would be enforced on connection and not on use charges[16]. In this way, USO would consist of permitting access to the connection network of the greatest amount possible of consumers without imposing ad hoc effective consumption -or use- which would be the case should the prices of the pulse per time unit be reduced (three-part tariff). It is worth mentioning that the recent tariff reform implemented in Argentina has in some way moved in this direction since free pulses were eliminated, and the fixed charges were reduced for those groups of low-income consumers.

### I.9. Regulation of the obligatory service and alternative technologies.

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[14] This idea is the basis of the price structure known as “Ramsey pricing”. Berg, et. al (1988); Brown, et al. (1986); Mitchell, et. al (1991).

[15] The debate on whether it will be financed by cross-subsidies (should access or use charges be subsidized?) or by direct transfers to the beneficiaries (issue to be dealt with further on) is still pending.

[16] This is still evident in conditions in which variable costs represent a lower share of total costs in relation to fixed costs. The network industries are generally included within this definition. Therefore, the "affordability" problem is closely related to connection charges.

When there are supply alternatives, the possibilities of successfully facing the problem of scarce supply mentioned in the above example increase considerably because such technologies are bound to generate different cost structures. This may be noted in the telecommunications industry in view of the constant technological changes. An example is the wireless telephony which uses a technology increasingly utilized in rural areas or low-density districts which are not attractive to companies operating with fixed networks.

The lack of attraction from an economic viewpoint is undoubtedly due to the fact that the minimum infrastructure requirements (networks) necessary to meet the demands of the inhabitants of the area, represent a cost burden that cannot be financed with what is collected off those consumers.

The advantage of wireless technologies consists in saving those costs at least to a sufficiently important extent so as to not become an economic income barrier. However, some of these technologies are normally more inefficient for areas with a higher population density, due to congestion and interferences inherent to urban districts. These technologies normally have lower costs than those of the fixed network telephony at low production levels (few consumers), but these costs grow rapidly if the served population in an area increases. In this way, the regulator may choose to permit the entry of companies with more efficient technologies for said areas. Probably under these circumstances, competition is possible, since the capital tends to be divisible, thus reducing the minimum scale. Therefore, the regulator has the possibility of introducing competition and demanding supply of the service. Likewise, the company which is already installed may be forced to adopt this technology through an additional clause to the universal service obligation (OFTEL,1997).

Finally, the possibility of competition presents an interesting perspective from the regulatory viewpoint since it diminishes the pressure on the regulator to fix prices. It is to be expected that a continuous competitive process will lead to a price reduction in the services. However, the entry of new suppliers may lead to duplicating costs which are amortized once the company invests capital in the area under consideration. If such capital is "specific" for that activity, exit from the market when the conditions justify it so (this is also part of the competitive process) means that the capital cannot be freely reassigned; therefore, if it stands idle, is subutilized or not used at all, society faces costs which must be calculated from the regulator's point of view. ([17] *and* [18])

If the regulator has no alternative regarding supply -and service is obligatory- the debate boils down to finding a mechanism to finance the activity where the conditions do not allow its self-financing. The regulatory experience shows that pricing with cross-subsidies is the most utilized tool[19]. This type of prices appears when there are differences in costs which cannot be

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[17] The importance of capital specificity in decision-making for entering and exiting the market is highlighted in Klein, et. al (1978)

[18] The impact of the technological change in defining the universal service obligation is highlighted in ITU (1994). The 1997 Telecommunications Act in the U.S.A. accepts that the definition of USO is dominated by technological changes and recommends imposing a "dynamic" definition.

[19] There is still a problem regarding the definition of cross-subsidy, an issue which will be dealt with again in the section on financing.

reflected -at least totally reflected- in the tariffs or else when there are differences in the purchasing capacity of the consumers.

The second part of this paper deals with the problem of regulating Obligatory Service and Universal Service Obligation in Argentina, for Water, Sewerage, Telephony, Gas and Electricity services.

## Section II

## REGULATION OF OBLIGATORY SERVICE AND UNIVERSAL SERVICE OBLIGATION IN ARGENTINA.

This section summarizes how Obligatory Service and Universal Service Obligation have been dealt with in the fields of Telephony, Electricity, Gas, Water and Sanitation in Argentina. However, it is worth clarifying that the debate focuses on the segments of these industries that are regulated at the national level.

Emphasis is placed on discussing who is responsible for expanding the networks, how these processes are financed, which elements determine the normal tariff and the expected tariff, including the treatment of consumers with arrears.

Preferential treatment given to pensioners is similar in the gas, electricity water and sanitation sectors and differs somehow in telephony.

Decree 319/97 determined the conversion of tariff subsidies granted in favour of pensioners for gas, electricity, water and sanitation services (stipulated in resolution 532/88), into a direct payment of $ 13.5 to each beneficiary (those collecting the minimum pension of $ 150). With this money, the pensioners must pay the companies the pertinent household tariffs.

It has been noted that some pensioners who receive a fixed amount -within the new subsidizing mechanism for those collecting the minimum pension- do not pay their bills. That is to say, they use the money they receive directly from the social security for other purposes and then run the risk of service cut-offs. Therefore, the mechanism of paying the companies directly was substituted for a method which allows the deviation of subsidies towards unwanted aims.

There are no differential tariffs nor any special treatment for the unemployed users in none of the analyzed sectors (gas, electricity, telephony, water and sanitation).

### II.1. Telephony

The National Telecommunications Act (Law No. 19.798) was a first approach to obligatory service since it defined that "everyone has the right to use telecommunications services open to public correspondence in accordance with the pertinent rules and regulations", although no reference is made to pricing.

On the other hand, the Tender Specifications set forth the obligatory nature of "ensuring continuity, regularity, equality and generality in the provision of the public services under the responsibility of the company".

Equality implicitly forbids any sort of price discrimination among consumers, beyond those allowed by the tariff structures, that is, tariffs for households, companies and professionals. Generality sets the target of disseminating the benefits of basic and non-basic telephony, to all consumers who wish to have the service.

Universality is explicitly stated in several passages of the sector's regulatory legislation[20]. An example is the Agreement signed between the two Licensed companies and the State (through

[20] The criteria for defining public services include these four characteristics, cf. Mayral (...).

the Ministry of Economy and Public Works and Services), for tariff reduction (Decree 506/92). It states the need to bring down connection charges in order to enhance potential consumer possibilities, reinforcing the idea of universalizing the use of telephony, at least of what is known as Basic Telephony.

Resolution 25.839/96 of the Communications Secretariat understood as universality "the universal promotion of basic telephony at fair and reasonable prices".

The recently issued Decree 92/97 ("General Basic Telephony Tariff Structure. Amendments. Regulations") stipulates this regulatory line of action, thus confirming the enforcement of the above principle, and sets forth the commitment to elaborate a National Social Telephony Plan[21] (Section 6) to materialize the above-mentioned concept.

Finally, since the universality criterion is in essence a principle which aims at encouraging the entry of new consumers, it makes sense to believe that the connection charges as well as the so-called fixed charges which are part of the final tariff to be paid by the consumer, are important[22].

The connection charge may be compared to a charge paid by the consumer to be considered as such. Therefore, the fixing of this charge normally has important consequences on the issue of exclusion (a point particularly considered in Decrees 506/92 and 92/97).

The companies agreed to lower connection charges in relation to those in force on the date they took over because them were not in line with international levels (cf. Table II.4). There has been a greater connection charge reduction in the non-household segment since it was considered that there was greater intensity of use of the telephone service in this sector (greater indispensability). It was also deemed convenient not to affect the production costs of these sectors with surcharges[23]. Moreover, these sectors demand services other than the basic ones.

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[21] This plan should have been drafted within 30 days running after Decree 92/91 became operational.

[22] The latter is analyzed in the following section together with the distributive aspects of said tariffs.

[23] Although, in the first instance, restructuring had acted contrary to the Ramsey rule, in fact, it is not possible to make a concrete analysis without resorting to a balanced evaluation mechanism. It is necessary to take into account the demand for telephone services versus demand elasticity regarding the rest of the products and the share of telephone services in total costs.

Regulations in force until 1996 acknowledged three groups (the household or family group, the commercial and the professional ones) but Decree 92/97 includes the Government as a new category. This categorization is reflected in the fixed charge of the final tariff. Decree 92/97 authorized an increase in the fixed charges of all the categories which, in the case of households meant an increase from $ 8.86 to $ 12.49 per month.

The magnitude of this fixed charge was justified by the fact that the companies would show cost structures with a high share of fixed costs, that is to say, not related to the measured rate but instead to network maintenance.

From the distributive standpoint, the impact is remarkable because high fixed charges somehow favour those categories which use the telephone service more intensely, since they could "liquefy" the fixed charge, with a decreasing mean tariff, measured by the mean cost of each call. Thus viewed, the problem of the fixed charge would seem to impact more on the household segment than on the rest since this category has a lower average consumption. Moreover, within the household segment, fixed charges more seriously affect the lower income groups.

It is worth mentioning that historically, the fixed charge was in line with the density of clients in each area and it was thus established in Decree 2332/90 (Annex XVI.I) on property transfer. This criterion was justified on the basis that the maintenance costs of the exchanges were inversely proportional to the customers included in each one, thus confirming the idea that the fixed costs in this activity are very important. Despite the rationality of this measure, such decree followed the tradition of the sector of reversing this reasoning and charging higher fixed charges in locations where the telephone network was denser. In this way, the expansion of the network was financed when the service was state-run (profits obtained from the network "justified" that current customers pay for the connection of future clients).

The recent tariff re-balancing[24] (still under strong debate) reversed this criterion, and eliminated district differences by establishing a single fixed charge for the whole country. But the level of fixed charges does discriminate among consumers in the same category.

Therefore, within the household category (resolution 348/88, Ministry of Economy and Public Works and Services, resolution 127/91, National Telecommunications Commission) discounts of up to 25% were considered for pensioners collecting a minimum pension, plus a similar increase in free pulses. The aim is to avoid that a considerably important amount of consumers abandon the market by returning lines already installed. This reduction suffered different modifications: Decree 92/97 created the "Low Consumption Customer" within the household or family category, with a view to achieving universality.

Although to date there are no clear cost studies, there was a suspicion that the tariff structure in force until January 1997, assigned values to inter-urban calls which were not in line with production costs, according to estimates of the Communications Secretariat and private

[24]The re-balancing was an attempt to correct relative tariffs keeping the companies total income at a constant level; it did not deal with costs nor did it guarantee sustainability, besides the fact of acknowledging that the current tariff structure allowed cream-skimming. It was based on price/fixed charge demand elasticities in urban and inter-urban areas.

organizations. On the other hand, inter-urban communications represented 8% of the total number of calls but accounted for 73% of TELECOM's income (during 1994-95).

This situation entailed not only a problem related to economic and allocative efficiency in service supply but also an important distributive problem.

The diagnosis study carried out by the Communications Secretariat expressed that the customers from the interior contributed more to the income of the companies than would have corresponded, taking into account the differences in consumption structure regarding customers from the so-called Metropolitan Area.

This diagnosis study was apparently based on the fact that inter-urban tariffs amply surpassed production costs, while urban tariffs were undervalued. The correction consisted in a remarkable reduction in inter-urban tariffs and an increase in urban tariffs (those of the Buenos Aires Metropolitan Area -BAMA). It must be noted that this measure is, to a certain extent, the opposite of what was decided with respect to the fixed charges through which the BAMA made a greater contribution towards financing the service than the interior of the country, due to the regional cost differences reported by the companies.

This is a long-standing problem regarding the regulation of the sector since it was already at stake before privatization took place. It is worth stressing that in 1980, it was estimated that inter-urban calls which represented 4% of the total, generated 20% of ENTEL's income.

The argument set forth by the regulatory agency to insist on tariff re-balancing was that urban traffic accounted for 92% of total calls and that these were being charged at 30% below the marginal cost, thus resulting in a deficit which has to be set off with inter-urban calls.

The changes implemented brought the prices of the sector closer to international standards but also aimed, in a certain way, at a regional re-distribution (such as the treatment of Key 1 in the interior or of the fixed charges) or at strictly social issues (benefits for reduced-consumption customers).

Decree 92/97 explicitly states two principles which have undoubtedly distributive effects: 1) equality in the treatment of consumers from different geographical areas; 2) encouraging certain social sectors to enter the market, although an efficiency price may not be assigned to them (linked to actual production costs).

Social telephony also reflects the decision of moving forward in the sense of enhancing the consumer range. No doubt this restructuring produced cross effects among the different consumer segments, which are difficult to measure since there are no official publications on production costs.

However, the information gathered permits a superficial evaluation of the measures adopted, taking as a starting point the average bills ex ante and ex post, calculated by the National Communications Secretariat. This methodology has a clear disadvantage because it does not enable the differentiation between the origin and the destination of the cross-payments that stem from the tariff structure although it does allow an estimate of the global impact on consumer categories.

The first evaluation made by the Communications Secretariat shows that the segment of consumers classified as Households will suffer an increase of their average bills while the remaining categories will record a reduction.

Average bills for these consumer groups recorded increases in the order of 21% for the Buenos Aires Metropolitan Area and 15% for the interior. The former is the group of consumers which are the most affected by the proposed tariff re-balancing.

The impact of this structure on the affected categories seems to be very important because their average expenditure is not the highest, on the contrary; households have average bills below those of the remaining consumers. On the other hand, the government and the commercial sector, which are the most benefitted by the change, are those that spend the most, not only because of their activity but because of their consumption structure which is more linked to the items for which tariffs have dropped (inter-urban and international).

The reasons seem to be related both to the relative price of the fixed charges (more bills for lower amounts) and the intensity of consumption on inter-urban and international calls. Both effects somehow favour the Commercial, Professional and Government categories in relation to the Household sector.

Supply costs for basic services are not the same in densely populated areas than in others where the population is more spread out. Consumers in less populated areas are not less "wealthy" than the rest but the costs of giving them access to the network within the framework of the available technology are very high. Therefore, natural monopolies are also at stake; in fact, tariff re-balancing was an attempt to hinder the progressive use of mechanisms such as the "call-back".

The problems of obligatory service regarding basic telephony services are partly related to giving access to potential users located in places which are either far away or difficult to reach.

Taking into account externalities, the system as a whole is interested in the provision of a minimum level of services. This sets forth several alternatives. On the one hand, the use of the main network or of some alternative means of communication; recently licenses were granted for operating low-orbit satellites which would provide services at a high price which can anyhow be afforded (US$ 3 per minute).

One of the main problems currently faced by the regulators is the clear definition of the limits between rural telephony and the remaining telephony services; there thus appears a problem of information asymmetry between operators and regulators, and of potential opportunism since the companies may exaggerate costs for permitting access. The solution of introducing substitution technologies -at least making them available and potentially competitive- seems appropriate.

Treatment of Delinquency

As was already mentioned in the first part of this paper, the treatment given to delinquent customers and the pertinent charges for disconnection and re-connection may determine a relatively higher 'expected' tariff for the users who have uncertain jobs and fluctuating wages.

When a bill is not paid by the customer within 30 days after its due date, suppliers may suspend the service. According to a recent amendment to the Customer Regulations, this suspension -for a prudent period- affects "outgoing calls" exclusively and the licensee shall allow the client to receive calls and to communicate with emergency services. In this way they do not lose network gains and society is not punished for an expense not faced by the user.

Once the service has been suspended, if the owed amount is not settled 60 days after the due date, the service is definitively cut off and the customer must pay the debt plus the re-connection charge in order to re-establish the service. This has led to certain speculation on behalf of the users to elude charges for arrears or not too pay very high bills because there are many extra lines and the installation charge is currently low. Therefore, some users prefer to give up their line and not foot the bill and then ask for a new line in the name of another person (a relative, for example).

Preferential treatment for pensioners and low-income customers

The tariff structure prior to Decree 92/97 considered special discounts to benefit pensioners, but did not take into account their monthly consumption.

As it was noted that many pensioners had a monthly average consumption above that of the household and commercial customers, a ceiling was set on the amount of pulses, introducing increasing bloc tariffs which benefitted the pensioners who used up to 300 monthly telephone pulses and those households with a monthly consumption of up to 150 telephone pulses. These "low consumption customers" within the household or family category respond to a USO criterion.

Social Public Telephony Plan

According to resolutions 2130/97 and 1716/97, the National Government must implement a "Social Public Telephony Plan at the National level targeted at areas with a high population density and scarce economic resources". The objective is to promote a maximum utilization and expansion of the telephone network, adjusting tariffs in such a way so as to facilitate the access of low-income customers.

In the 1997-98 period, both Telefonica de Argentina S.A. and Telecom S.A. are forced to install 1000 semi-public phones for receiving calls. The installation of these phones will not entail any connection charges nor fixed monthly charges. They will be located in charities, municipalities, intermediate associations, schools, first aid centers and not in the streets, although the Communications Secretariat has informed that destruction of phones do not normally occur.

One of the most common complaints is that the semi-public and public phones do not give any small change; this means an implicit minimum tariff for poor users. The companies allege that it is impossible to transform telephones into change-giving machines (there is thus a moral issue). These public and semi-public phones will operate on legal tender ranging between $ 0.05, $0.10, $0.25 and $0.50. The pulse is priced at 5 cents (VAT included) without any distinction between normal, peak or reduced tariff timetables. Although inter-urban calls may also be made at differential tariffs, the phones will be installed with a blocking mechanisms for incoming and outgoing international calls.

## II.2. Electricity Services

Law 15.336/60 already stated certain obligations for the service licensee such as service quality clauses.

Law 24.065/92 which characterized electricity distribution as a public utility stated that "distributors should meet all electricity service demands required from them" and moreover, that "they must allow indiscriminate access to third parties to transmission capacity", and may not "grant or offer advantages or give preferential treatment for access to their installations".

The concession contracts of the Edenor, Edesur and Edelap distributors forces them to meet all supply demands for this public service within their concession area, seeing to all new requirements, whether it is an increase in supply capacity or a new request for services. Likewise, the contracts say that the distributors must make all necessary investments to fulfill their commitments regarding the provision of this public service.

However, users have to fulfill certain requisites for supply to be maintained. Section 6 of the Supply Regulations states the conditions for cutting off supply, which include, among others, a bill not paid, a user putting the safety of the distributors installations at risk, or the reselling of energy. In all these cases, the distributor must previously demand regulariztion of the anomaly.

Distributive aspects of the tariff structure

The law states that tariffs must recognize efficiency costs, the economic cost, thus preventing any sort of implicit subsidy in the tariffs. That is to say, that each tariff for each type of user and each type of service provided by the distributor shall be calculated on the basis of the exact economic cost of this service. Consequently, law 24.065, section 40, paragraph b) establishes that the tariffs "shall take into account the reasonable differences which exist in the cost of the different types of services, considering the supply system, geographical location and any other characteristic that the regulator may consider relevant"; while the same section of Decree 1398/92 states that "distribution costs will be allotted to the different tariff categories bearing in mind: 1) the supply tension; and 2) the consumption modality of each user, taking into account the participation in load peaks in the distribution networks".

The principle of actual economic costs entails, on the one hand, the prohibition of cross-subsidies in relation to which section 42, paragraph e) determines that "in no case may the costs attached to the service provided to a user or category of users be recovered through tariffs collected off other users". On the other hand, discrimination by prices is forbidden by section 44: "No transmission company nor distributor may have differences in their tariffs, charges, services or any other concept, except those resulting from a different location, type of service or any other specific distinctive feature as the regulator may reasonably approve".

It must be clarified that compliance with this principle does not hinder the State's capacity to grant subsidies to certain groups, it only sets forth the need for said subsidies to be explicit and not concealed.

Among other remedies, the law envisages (Decree 1398/92) a reduction in tariffs for the pensioners, charities, non-profit organizations and/or electricity-intensive industries, charging the cost to the government area responsible for the subsidized social sector.

Likewise, section 70 of the law envisages the creation of a National Electricity Fund, 60% of which will be allocated to setting up a Subsidiary Fund for Regional Tariff Compensations which will be distributed among the provincial jurisdictions which adhered to the tariff principles of law 24.065. The remaining 40% will be contributed to the Fund for Electricity Development in the Interior of the country.

Acuerdo Marco

In 1994, with a view to including the inhabitants of the shantytowns and poor neighborhoods as customers of the distributors Edenor S.A. and Edesur S.A. (and, in turn, diminishing non-technical losses), a four-year Guidelines Agreement was signed between the above-mentioned companies, the National Executive Power and the Executive Power of the Province of Buenos Aires. Different categories of needy inhabitants were defined.

The National State pledged a contribution equal to 18% of the net billing corresponding to users included in the Framework Agreement. This contribution was used to cover unpaid balances of the shantytowns, and the amount left over was allocated to the payment of the $ 20 million acknowledged to each distributor, discounting the municipalities' contribution (6%) and the provinces contribution for electricity infrastructure works (9.5%).

The Province of Buenos Aires had to provide the necessary cooperation to ensure that the distributors could enter the shantytowns to install meters so as to control consumption. It also had to contribute 9.5% for taxes levied according to Decree-Laws 7290/67 and 9038/78, on the distributors investing in electricity infrastructure works in the shantytowns and poor neighborhoods. Moreover, the province was in charge of disseminating among the municipalities the contents of the Agreement, and of negotiating their entering into individual agreements.

The municipalities had to collaborate too in order to ensure the distributors access to the different places for installing meters, carrying out a census of the inhabitants and dwellings and opening up streets. The regularization process also included paving the way for the inhabitants to obtain title deeds in relation to their property. Moreover, the Municipalities also waived the 6% municipal tax which was to be included in the bills collected from shantytowns and poor neighborhood inhabitants, installed Public Lighting and bore the costs of installation and maintenance expenses, using systems which did not allow theft of electricity.

The Distributors waived their right to any claim and/or collection of bills, surcharges and interests accrued since 1992 due to direct connections or any other unlawful or irregular use of electricity. They also pledged: 1) to install collective meters and issue a monthly payment notice for each group according to the established tariff; 2) to comply with the installation of at least 10.000 meters a month; 3) not to cut off supply to the shantytowns and to carry out a population and dwelling census in the poorest neighborhoods, informing the population beforehand. They could only cut off supply in individual cases due to non-payment or unlawful appropriation of energy.

After a first analysis, it is possible to conclude that the Framework Agreement seems to have worked well, widely achieving the initially proposed targets. It included 650 thousand users, that is to say, a population of around 3 million inhabitants.

Before the Agreement was signed, many inhabitants in the poor neighborhoods or shantytowns were illegally connected and did not pay for what they consumed. Not only did they avoid paying but also used electricity inefficiently (for high electricity-consuming devices, heating of the dwelling or cooking). Moreover, their connections were not safe at all (there was a high rate of accidents in which people were electrocuted) and the electric devices used in their homes were damaged (fridges burnt out, for example).

As a result of this Agreement pre-assembled cables were laid which prevented clandestine connections and meters were installed (an average 10.000 a month). In this way, the company improves its billing rate (the current collection rate stands at 85%) and quality of the service is better. The high degree of compliance is due to the fact that it is possible to cut off supply now that there are meters and that available substitutes are frightfully expensive.

It is considered that the Agreement was a good method to channel strong social reactions vis-à-vis the fact of prohibiting illegal connections and, at the same time, disseminate the use of electricity and the pertinent infrastructure. Bad debts were thus covered by the State, the Province of Buenos Aires and the municipalities of Greater Buenos Aires (only two of them, San Isidro and Vicente Lopez did not adhere to the Agreement).

The Agreement favoured the building of streets and the definition of the property rights of the land, an issue very favourably considered by most of the neighbors. It must be recalled that in Argentina it was believed that paying of public service bills gave the inhabitants the right to own the land.

Although the above-mentioned sector of the population has improved its living standard, the shantytowns have grown more in the city of Buenos Aires where the Agreement is not in force. In this sense, some inhabitants seem to "flee" from the urbanized areas because they have not paid their bills or because they no longer have a place to live once the streets are opened.

Connection and re-connection charges

Concession contracts issued to the electricity distributors force them to meet all supply demands in their area of concession. According to the initial tariff table, connection charges for a household range between $56 and $489, depending on whether the connection is common or special, if the area is single-phased or three-phased and if it is an underground connection or not.

Re-connection charges for services which were interrupted due to lack of payment (the service is cut off 14 days after the due date) are $4.60 for households. However, section 7 of the Electricity Supply Regulations states that in the case of supply suspended due to lack of payment, the cut-off means withdrawal of the connection and of the meter. Consequently, to reinstate the service it is necessary to pay the costs for a new connection, besides a rehabilitation fee.

Special tariffs for pensioners

Before privatization and the resulting implementation of the Argentine electricity sector reform, there was already a differentiated tariff in place which granted subsidies to users with certain characteristics. In 1988 the Energy Secretariat set special electricity (and gas) tariffs for pensioners who used the services of SEGBA S.A. or AyEE S.E., considering that "it is necessary to intensify the measures implemented by the National Government in relation to improving the general situation of pensioners, and an indirect way to achieve this is by establishing special tariffs for essential public services".

On the other hand, this benefit does not include all pensioners. In order to be eligible, it is necessary for the pensioner to collect the minimum pension and moreover, be a household user of SEGBA S.A. or AyEE S.E. electricity companies.

The subsidies are explicit and are part of the general State budget. Their implementation should not affect the suppliers economic equation. These principles have been respected by Law (Decree 1738/92) but the implementation of the policy in itself has faced transformations.

This pensioner subsidy is applied nation-wide and is exclusive for network electricity and gas. It is directly managed by ANSES (National Social Security Management Office) and the difference between the billing at the Differential Tariffs and at the Maximum Tariffs for households was reimbursed by ANSES directly to the companies, prior verification by ENRE (Electricity Regulatory Agency) and ENARGAS (Gas Regulatory Agency) of the validity of the reimbursement requests submitted by the companies.

ANSES had to compare the list of subsidy beneficiaries with the list of people on a minimum pension held by the social security system.

Decree 1398/92 (which regulates Law 24.065) stated that it was only possible to keep tariff reductions for pensioners whose income did not surpass the amount fixed by ENRE, for charities, duly registered non-profit organizations and/or electricity-intensive industries if a specific budget line was set up to pay the licensees the difference that the subsidy brought about in their revenue (...)".

Resolution 39/93 of the Energy Secretariat sets forth the extension of the special system for Pensioners who are users of the distribution companies at the national level, EDENOR S.A., EDESUR S.A. and EDELAP S.A.

Regarding the bonus received by the beneficiaries of the System, it takes into account the bimonthly consumption of electricity, stating the maximum amounts allowed and placing a ceiling on the final amount of the subsidy. The users framed in the tariffs called T1-R1 and T1-R2, small household users, are given a 50% discount on the fixed charge and on the first 210 Kwh of electricity used in the bimestre. All consumption above 210 Kwh, if any, are billed at the normal tariff.

No discount is applied to users that have bimonthly consumptions above 430 Kwh. Likewise, the amount of the subsidy must be stated in each bill forwarded to the users.

In order to implement this System, the distributors had to timely submit an affidavit with the pertinent information on the beneficiaries to ENRE and ANSES. In turn, ENRE requested ANSES to issue the payment orders for the distributors regarding billing accrued for the previous month, charging it to the pertinent line of the National Budget.

Disperse Rural Population

Users who live far away from the distribution network have been treated according to the specific characteristics of each region.

The Concession contracts of the distributors at the national level envisage a special reimbursable contribution to be paid by the users of the non-electrified rural areas.

Regarding the privatizations carried out in the provinces, some of them (e.g. Jujuy, Salta and Rio Negro) have adopted a different mechanism to meet the needs of the rural population which has no electricity supply and is located far away from the provincial distribution systems in areas with very low population density.

To this effect, the privatization process considered two different concession areas:

* Concentrated market, meaning the market connected to the national or provincial distribution system and the isolated generation systems connected to local networks.

* Disperse market which includes the remaining provincial territories (with no electricity supply).

That is how two different companies were set up to provide services in areas with specific characteristics, adjusting themselves, of course, to quality, environmental and tariff standards for each region[25].

On the other hand, and due to the fact that this market has specific characteristics, the extension of the distribution networks in order to supply electricity to disperse users is not optimum. Therefore, the inhabitants of these areas are supplied by using alternative systems (photovoltaic, aeolian, small hydraulic turbines or diesel-run systems).

In this way, the disperse areas have their own tariff tables[26] and the subsidy is paid by the provinces to the licensees.

It is worth mentioning the Electricity Undersecretariat's Electricity Supply Programme for the disperse Population in Argentina through which it is helping some provinces out for the elaboration of similar mechanisms, aiming at electrifying 1.4 million inhabitants (300 thousand households) and 600 public services (schools, health centers, police quarters, among others).

## II.3. Gas Supply Services

In June 1992 the only state-run company which was massively distributing gas by network at the national level was divided into two big pipeline transmission companies and eight distribution companies.

The distributor must supply the service to all users who pay enough for said provision to be profitable for the company. However, and unlike water supply, the users are not forced to connect to the network.

Connection charges range from $15 to$70 (plus VAT) depending on whether the network has ready-to-be-connected household connections for providing the services or not. A fine of $23

[25]The fact that there are different tariff tables for each licensed area would not allow the existence of cross-subsidies among sectors with different consumption levels within the concentrated market areas.

[26]Unlike conventional tariff tables -such as the one for the concentrated market- the user will pay for the energy made available, independent of the level of consumption.

is charged for re-connecting a service which was disconnected due to lack of payment, whether or not the individual meter was removed.

Financing Plan for gas installations

Since 6 October 1996, in accordance with Enargas' resolution 412/96, distributors may finance works through banks. Under said resolution, in May 1997 Gas Natural BAN, the northern metropolitan area distributor launched a financing plan for the internal installations for low-income sectors, who are reached by the distribution network but have not been able to gain access to the service (an estimated 150 thousand homes have not connected to the service although they are within the reach of the distribution network).

According to the proposed system, the internal installation could be paid in 12, 24 or 36 fixed monthly installments in pesos, at an annual 14% rate (prices are fixed at $732, $919 and $1162, if 2, 3 or 4 devices are connected).

Through this measure, distribution licensees plan to incorporate 500 thousand potential users throughout the country who cannot afford internal installation costs and have no access to any sort of financing.

Although these credits will allow low-income sectors to gain access to gas services, they would leave aside the unemployed because these credits will only be granted against the submission of a statement of earnings. Moreover, the regulatory agency allows the company to interrupt the services if the users do not pay up the installments for the connections.

Subsidies in “low temperature zones”

When gas distributed by networks was a public service, Gas del Estado had a regional subsidy structure for households similar to those existent at present (entailing substantially lower costs for those customers benefitted by the implicit subsidies). In fact, the Tariff Sub-areas which exist nowadays are mostly a copy of the zoning used by Gas del Estado.

Resolution S.E. N1 169/92 established as from 11 January 1993 differential tariff structures for households using natural gas in the provinces of CHUBUT, SANTA CRUZ and TIERRA DEL FUEGO, provided they were serviced by distributor "Gas del Sur". Bills were issued every two months.

Currently there is a subsidy for households in the Patagonia region. The externality aimed at when subsidizing gas consumption in particularly cold regions is to ensure that basic survival needs are met for the area to have a stable population. The subsidy is applied through a differential tariff table for each sub-area. The colder the region, the higher the subsidy which then decreases gradually as consumption increases (until it is completely eliminated). This has brought about reactions from those users who believe their consumption is not being properly measured o who feel discriminated because they are just beyond the established threshold. The tariff is not bloc-increasing in the traditional sense. If the threshold is surpassed the whole bill is increased (a mistake in design). See ilustration. The subsidy is not applied to any sector other than households.

Universality and tariff structure

The concession contract sets forth regulation via maximum prices in constant dollars which is seasonally adjusted twice a year. Moreover, the agreements include the possibility of tariff adjustment due to technological advances (the X factor) and an adjustment for financing investment plans (the K factor).

While the X factor tends to bring down tariffs, the K factor tends to increase them, resulting in a cross-subsidy by which users that already have the service finance the entry of new users to the network (it is a subsidy for all users, not only for the poor). Since the concession contract establishes that the licensees cannot generate cross-subsidies among consumers, unless it is explicitly set forth in the budget, this cross-subsidy is justified by possible positive externalities (which will be seized by the users that already have the service) stemming from certain network gains (stabilization of flow in the pipes).

The principle of universality is not present in the normal user/supplier relationship for the servicing of gas through networks, being the subsidized consumption the only exception to this rule. However, this categorization does not yet allow the assimilation of a certain degree of the supply to the "universal basic service" principle, while only a certain type of consumers qualify for the subsidies.

The definition of tariffs is based on a cost allocation mechanism grounded on the principle of strict variable-fixed allocation. Therefore the definition of distribution tariffs is an aggregate of three concepts: the cost of the gas bought and approved by ENARGAS, transportation costs (affected by the pertinent load factors which define among how many cubic meters distributed to a standard customer must the fixed cost be shared for keeping an available transportation capacity so that those cubic meters are finally delivered to the client), and the distribution margin. However this strict variable-fixed principle is not explicitly acknowledged in the License.

Since privatization, household users and those belonging to the General Service category for Small consumers are forced to pay a minimum bill per bimestre. This ensured revenue allows distributors to recover the hired transportation capacity costs.

Financing subsidies

Law 24.076 forbids cross-subsidies among consumers (understanding as such the capacity to recover costs incurred for supplying a certain category of customers through tariffs charged to another category or categories).

After privatization, the privatized companies were given, through their Authorization Contracts (which in the case of the 10 companies Gas del Estado was broken down into, were issued in the way of Licenses) a guarantee for collecting the full amount of the authorized tariffs (which represents the ceiling). In the Gas sector, these guarantees are backed by the Framework Law which executed the privatization (Law 24.076).

Since the time of its implementation, the system for subsidy settlement has given the regulatory agency (ENARGAS) the faculty to authorize the maximum tariffs to be applied, including differential tariffs. However, management of the funds, verification of the settlements and the capacity to propose the differential tariff structures to ENARGAS has undergone changes in its ruling and application modalities.

Under any of the systems which have been in force during the post-privatization era, Gas Distribution Licensees using networks (whichever the composition of the fuel flowing through the pipes) have received the necessary funds from those responsible for managing the subsidy (ANSES in the case of pensioners collecting a minimum pension and the National or Provincial Governments in the case of Patagonia households) in order to compensate the differences between the maximum authorized tariffs to be applied to the household category in each distribution sub-area, and those effectively paid by the benefitted users.

The subsidy is also applied through a Differential Tariff Structure/Table and 1) responds to provincial geographical boundaries and not to Tariff sub-areas; 2) there are two Differential Tables for each province, one for the Winter (May through September) and the other for the Summer; 3) Winter tariffs are lower than Summer tariffs, and consumption levels are also wider in Winter; 4) Differential Tariffs are comparatively lower in the colder regions; 5) Differential Tariffs are applied by consumption categories adjusted to each region's conditions (the first category which receives a higher subsidy is the widest in the cold regions); 6) if the first category is surpassed, consumption is again billed at the Maximum Tariff for that bimestre.

This last issue brought about severe complaints from users whose billed amounts jumped despite very slight changes in the level of consumption.

## II.4. Water and sewerage

At the time of its privatization, "Obras Sanitarias de la Nacion" (National Waterworks Company), needed important refurbishing and the replacement of pipes and obsolete equipment, improvements in the treatment plants and expansion of the network which only serviced 55% of the population with drinking water and 39% with sewers within its jurisdiction. The districts with the lowest per capita income were the least supplied.

Most of the wastewater (95%) was not treated before it was discharged into the Rio de la Plata and there was also a great amount of wastewater overflow due to the clogging up of the sewers.

The regulations set forth investments to be made but give the licensees sufficient freedom to proceed according to each one's outlook of the business as long as certain coverage and quality targets are achieved, according to the goals of the five-year plans which the 30-year concession is divided into.

The licensee may freely use water resources for obtaining superficial water (basically from the Rio de la Plata which represents 95% of the total amount) or the underground layers to spill sewer effluents which is also normally discharged in the Rio de la Plata, without any prior treatment.

The Regulatory Framework for the concession as stated in decree 999/92 explicitly forbids the licensee from voluntarily restraining supply.

Micromeasurment

Micromeasurement of water consumption was not very widespread, applying only to 15% of the connections; and the recording of water consumed was not very trustworthy. Moreover, there were a lot of leakages because the system was not in a good state and also a lot of misuse since there was no pricing mechanism (See Illustration).

The reduction of the basic tariff (an element taken into consideration when awarding the bids) initially brought about a 27% decrease in the bills.

The users in households where the service is not measured can decide to shift to this option (optional pricing). When there is no meter, a fixed charge is billed; if there is a meter, the fixed charge is 50% less but the usage cost is positive and is specified in the Tariff System.

An ETOSS 1993 resolution set prices for the meters, their cleaning and accessories and also stated the possibility for the licensee to give users a 6-month credit, at a similar rate to the Banco Nacion discount rate.

Since the option may be reverted, if the user notes an excessive increase in the billed amount compared to the consumption prior to the installment of the meter, the alternative of choosing benefits the user because the licensee must compensate the users for an amount equal to the price of the installed meter. However, the user must pay a charge which includes the meter, its installation and accessories ($150 on average) and an annual charge of $15 for reading the meter.

Connection charges for water range between $153 and $454 (according to the diameter of the pipes) and sewer installations range between $227 and $255. Re-connection charges for the services are between $113.5 and $340 for water and between $192 and $227 for sewers.

The base tariff for the service provided without meters is broken down into a fixed charge, the Basic Bimonthly Tariff (BBT), total roofed area (RA), a building coefficient E, which takes into consideration the type and date of building of the premises, plus a tenth of the land surface (LS):

$$BBT = K * Z * TG * (RA * E + LS / 10)$$

where Z is the geographical area where the premises are located and K is a constant which is equal to approximately 0.8 (and a value of 1 at the time the privatization took place). For premises under the Empty Plot category, only the tenth part of the land's surface will be considered. On the other hand, the area factor Z, fluctuates between 0.8 for poor neighborhoods and 3.6 for the wealthiest neighborhoods, and the same as E, requires continuous updating.

The base tariff for measured service is the following:

a) A fixed charge equal to 50% of the basic bimonthly tariff (BBT)

b) A segment of free consumption according to the zone coefficient

c) A price for every cubic meter in excess

The installation of meters for households entails that big, low-income families living in small or old dwellings will have to pay more if shifted to the measured system, unlike high-income sectors in which there are only a few people living in big, modern houses.

At the time of installing the water meter, the licensee must inspect the internal installations of the user and should a leakage be detected, the user must repair it, bearing the pertinent expenses.

The tariff structure expressly admits the possibility for the licensee to balance its economic equation through certain groups of users.

Before the privatization process, there was no relationship with the economic cost of the services, to guarantee that the total coverage of costs (operation and maintenance costs as well as expansion costs through the necessary investments to comply with future envisaged services, including the normal benefit on the capital), and therefore, the Treasury had to aid the company on several occasions.

Due to the lack of a consumption/tariff ratio, a rational use was not promoted; the marginal price was zero for the user, thus encouraging misuse. In the tender specifications for "Obras Sanitarias de la Nacion" daily consumption averages are mentioned as "ranging between 280 and 430" litres per inhabitant, where besides an unprecise estimate, it may be noted that the figures are too high with respect to the world average which is 200 litres per inhabitant per day.

Since the measured service was not widespread, the company found it difficult to locate leakages throughout the distribution network.

As no seasonal variation was taken into account, and in view of the state the system was in, water was scarce in Summer, a time when demand increases.

The implicit subsidy for users with gardens was regressive, ceteris paribus, services consumed by these users were financed in part by those that did not have gardens.

This implied mostly a regressive subsidy among users with different income levels, more than a progressive subsidy among users with different water consumption levels. It did not seem necessary to use drinking water for irrigation purposes when the area of operations of Obras Sanitarias has around 1000 mm of rainfall per annum.

Network expansion and infrastructure charges

In order to meet community needs, coverage goals must be established for the services, following a chronological schedule.

In this manner the political power does not delegate its responsibility for determining priorities in meeting the needs of the population with respect to drinking water and sewers, which in the case of being fixed by the licensee would take into account profitability and could relegate low-income sectors.

The obligatory nature of connecting to the network of drinking water and/or to the sewerage system favours the dissemination of positive externalities. Regulations explicitly mention the complementariness of both services. Besides the obligation of connecting to the network, the households must make the internal installations.

The regulations also established the obligation to pay for infrastructure and connection charges, something new in the privatization era.

Providing obligatory service to all the inhabitants of the areas serviced or to the regions covered by the expansion plan, as well as generality, are imposed on the licensee so as to force it to effectively provide the service, doing away with the possibility of any sort of discrimination.

The Licensee is also obliged to isolate any other water supply source once the service has been provided, permitting the user to keep any other source as long as there is no risk for public health or for the public services. Once the service has been provided the licensee must also fill in any septic tank or any other alternative means of wastewater disposal.

The licensee's obligation of supplying water free of charge to firemen and to put out fires is also explicitly mentioned in the regulations.

Infrastructure charges may be financed throughout two years, in bimonthly, equal and consecutive installments. However, the low-income users still find it difficult to afford these prices. Infrastructure charges are in the order of $ 600 per customer in the case of water and $ 1.000 for sewers. Moreover, the licensee charges between $ 150 and $200 for connecting the service to each of the new users[27].

The infrastructure charge formula contains a network component and a connection component:

$$Cii = STi\ KM\ Pr + Pc$$

where Cii is the infrastructure charge for premises belonging to a specific project; STi is the area of the land on which the premises are located; KM is a coefficient which depends on the type of soil and on the repairs of pavements and streets in each specific project; Pr is the price of the distribution network component, and Pc is the connection component price.

KM is negatively dependent on the cohesion of the soil, and positively dependent on the underground sheet of water and on the percentage of repair required by the pavement and street. These values appear in a table and the ratio between extremes is 2:1.

Since payment of the infrastructure and connection charge is obligatory and in view of the difficulties of the low-income inhabitants to afford such high amounts, there is currently a bill (promoted by Executive Power decree 149/97) which proposes to replace infrastructure and connection charges by a fixed charge in the service bills. According to the bill, a new charge of $ 120 would be implemented, payable in 30 monthly installments of $4 for the new users; anyhow, all bimonthly service bills will be increased by $4.

Part of these $4 would be allocated to financing the sanitation plan for wastewater which is currently spilled into the Rio de la Plata. Should this bill be successful, it would imply a cross-subsidy by which all current users will finance entrants to the network.

[27]Recent studies carried out in the United States have calculated that, on average, costs of basic infrastructure necessary to meet the needs of a 3-member family, providing them with drinking water and sewers is around US$ 200, approximately a fifth of the values fixed for Argentina.

The application of a fixed amount that would substitute the infrastructure charge is questioned by some sectors of society, who consider it is neither fair nor equitable for lower-income users to face a higher increase in relation to what they pay, than the customers that consume more. The bill would aim, on the one hand, at implementing universal service (permitting the entry to the service of new low-income users) and, on the other hand, it would be setting aside from the system, customers which currently use the service, but would find it very difficult to face an increase of $4 in the fixed charge.

Treatment of delinquency

The licensee's right to cut off the service due to lack of payment -if at least three terms have not been paid- is not applicable to hospitals and clinics, either private or public, and the intervention of the Regulatory Agency is necessary to avoid other cut-offs, in line with the regulations in force.

The adopted system is more severe than others in force (in San Luis, for example, where water is still provided to a tap outside the premises).

Disconnection charges are equal to 9 bimestres of service, and connection charges represent 3 bimestres.

Since the inhabitants of the serviced area are forced to enter the network, only the owners of empty premises may request either that they disconnect or not connect the property under consideration. Anyhow, the user is not exempted from obligatory connection. If users wish to have their own water well or any other alternative source and not be connected to the network, they must request permission from the licensee, that shall accept the request as long as the water from the alternative source fulfills the quality standards in force.

Besides the obligatory connection to the network, there is also the obligatory installation of the internal household services. However, as far as water is concerned, there is no regulation allowing bank financing of the internal installations, as happens in the case of the gas sector.

Should the payment of bills be in arrears, the licensee may charge interest and, moreover, cut off the service when 180 days have elapsed from the due date. However, the service may not be cut off if there is an order from the ETOSS or the Ministry of Health and Social Action. In this way, service cuts come under the sphere of public health, thus preventing cuts in clinics and hospitals (either public or private), although the same does not apply to households. In the latter case, only the situation of extremely poor users is analyzed.

The concession contract authorizes the licensee to bill drinking water in blocs to the building consortiums, a measure which facilitates dealing with delays in the payment of the service because, if the water is cut off, it would affect all users in a building. In this way, the neighbors of the delinquent customers would step in to avoid these cut-offs. However, this measure was deferred because the Ombudsman initiated proceedings for the protection of these rights.

Experience regarding network expansion

According to a recent MEYSP study (1997), out of the 27 million inhabitants of the urban areas, close on 5 million had unmet basic needs and most of them had no drinking water or sewers. There are no comparative data to know how these figures have evolved, although it is believed that the situation has improved.

However, the low-income population may have broken down into two groups.

On the one hand, many of them have been included in plans to gain access to the services, some of these plans in combination with the Ministry of Labour (for example, the neighborhood's inhabitants were hired to carry out the infrastructure works) and the Province of Buenos Aires (more general community coordination and assistance plans targeted at all the aspects of poverty). In this way, the poor population improved the infrastructure and regularized their situation regarding ownership of the land they live on.

On the other hand, some residents have not been able to simultaneously face new obligations, besides their real estate taxes, payment of their land installments, electricity and water tariffs, among others. Therefore, these inhabitants have shown a trend to migrate towards less formal districts, or where these plans are not applied, such as the Federal Capital shantytowns.

There thus appears the phenomenon of jurisdictional externality and elusive demand, which migrates in order to avoid paying the cost of the service. Furthermore, the adherence of great part of the neighbourhood to the network would make substitutes disappear, forcing the rest to move into another area.

Decree 149/97 authorized the comprehensive re-negotiation of Aguas Argentinas' goals and demands in a term of 180 days, which may be extended for an equal period. This would be the first privatization which is globally reviewed. The justification of the national authorities for changing the rules of the game of the concession, is the need to re-establish the licensee's economic and financial equation which has been affected by the suspension of infrastructure and connection charges which were to be paid by new users.

The impossibility to pay for infrastructure does not differ much in Greater Buenos Aires, as far as Aguas Argentinas is concerned. In line with the budget estimate, in 1997 the above revenue would have been around US$ 50 million, with total bills for around $400 million, but in view of the population's situation, it was impossible to collect that much.

It is worth noting that bills charging the extra $4 per bimestre are already to some degree non-performing (cf.MEYSP, 1997).

Figures available regarding family income help to understand why this happens. For the first decile the nominal and real income reached a maximum value in 1994 and then dropped, while the unemployment rate is still high (and affects the poorest segments).

In order to compensate this unbalance, several alternatives have been studied since 1996:

* modifications in the economic and financial parameters of the concession: fixed increases of $2 or a certain percentage of the tariffs, or the reduction by half or by a third of the infrastructure and connection charges, together with a 7% tariff increase;
* extension of the serviced area to other districts in Greater Buenos Aires;
* extension of the concession term;

* temporal re-programming of works foreseen as obligatory investments;

* Treasury subsidies for the US$ 50 million not collected.

It is difficult to solve this situation because the target population is the low-income sector and the costs for making connections in the poor areas is not really known; moreover, the companies have little experience in solving and dealing with assistance plans because they are used to operating in developed countries.

## Section III

## PRACTICAL APPLICATION OF THE OBLIGATORY SERVICE AND UNIVERSAL SERVICE CRITERIA: RESULTS

As from the application of OS and USO criteria in Argentina it is possible to identify some phenomena and draw some interesting lessons.

Many of the above are related to the fact that the privatization process in Argentina was a quick, wide process. Although there was certain experience in dealing with OS and USO criteria in public companies, the private operators and regulators encountered a series of problems which were new to them. These problems were exacerbated because the economy itself changed, and grew together with a persistently high unemployment rate.

Maybe the most interesting exercise now would consist in trying to analyze the failures detected in the market as well as setting forth the successes and mistakes observed, classifying the most important ones from the economic viewpoint.

### (1) Inter-jurisdictional Externalities

This is a phenomenon which appeared due to the migration of the inhabitants of the poor neighbourhoods towards jurisdictions where property had not been formalized. They bore the burden of fixed and simultaneous expenses.

Although it is known that fixed charges affect the will to adhere to the network, the impact is enhanced by persistent unemployment and low, fluctuating incomes.

### (2) Elusive demand

In Argentina, the analysis of OS emphasized minimum expansion and quality conditions which were imposed on the regulated companies. After a certain geographical expansion, the companies came across low-income neighborhoods which went side-by-side with high, uncertain access costs. This entailed more difficulties to achieve the USO objective and more hesitation to progress on OS.

The Agreement of guidelines is a good example of a mechanism which seems to have worked properly. It blended the efforts of the companies and the national and provincial governments, overlapping with other social assistance plans. The question is whether it would have worked without these other plans.

The coincidence of the new conditions in which the services were provided is not a minor issue. This could be a good example to show that a gradual policy can work better than a "shock" procedure.

### (3) Expected tariffs, unemployment and delinquency

The demand-side may self-exclude themselves partly due to the tariff, which is related to their payment capacity, the expected unemployment rate, the expected salaries and the re-connection and delinquency charges.

Within the framework of a static economy without unemployment, the optimum tariff structure depends on the elasticity of the fixed charge and of the usage charge. In an economy with persistent unemployment and an improper income distribution, these elasticities are still more important.

**(4) Access to credit and fixed charges as implicit contracts**

The remarks set forth in the above point are important for designing the financing methods for infrastructure charges, setting the fixed charges and the delinquency costs (re-connection charges, interests on the debts, among others).

Most of the financial assistance programmes in Argentina did not take into account the unemployed; normally, the latter have no access to credit.

The expected tariff for the unemployed poor sector may be much higher than the normal tariff: these people know that they will go through periods in which they will not be able to afford the tariff, and will have to pay re-connection and delinquency charges, besides those for infrastructure. Moreover, the expansion of the services was implemented side-by-side with the elimination of leakages, misuse and clandestine connections, that is to say, a decrease in the availability of the services free of charge.

It is true that normal tariffs, in general, are relatively lower than the cost of any substitutes. But many times, these substitutes can be bought on the spot, when needed, while access to the network and a fixed charge entail an implicit contract and a certain degree of commitment and inflexibility.

Anyhow, the plans which included credit for paying for infrastructure were not that successful.

**(5) Regulatory policy, employment policy and social policy**

The regulatory policy was implemented faster and with clearer objectives than the unemployment policy; maybe that is the reason for part of the difficulties encountered. To try and solve unemployment problems through the tariff structure is not such an optimum solution, and to define a cross-subsidy structure is not sustainable in the long run.

In some sectors, the "cross-subsidy" policy is explicit (such as in water), in others it is implicit. It includes both use (on-going) as well as expansion (one-off).

The issue here is whether to operate as if the situation were that of full employment, or whether to make a provision regarding informality and low income of the targeted users, and permit cross-subsidies; or else suggest the need to deal with the poverty issue at a different and more comprehensive level.

Anyhow, some of the successful plans to ensure Universal Service were those which improved both things at a time, using workers from the poor families for infrastructure extension works.

**(6) Latent opportunism of the users benefitted by special programmes**

The special tariffs in telephony, which favour the pensioners collecting a minimum pension, show that this special treatment of a sector may induce free-riding. When they had unlimited special subsidies, their bills were higher compared to the average households, and even when compared to some commercial users.

In the telephony sector, this problem was corrected by establishing a maximum number of calls.

**(7) Fixed allocations for paying the services do not ensure USO**

In the cases of gas, electricity and water the system shifted from a scheme subsidizing the pensioners using social security funds, to a fixed monthly allocation included in their pensions to face all service bills.

The objective was to avoid an excessive burden of pensioner's expenses on the public accounts, but it has already been noted that many pensioners do not pay their bills. If the services are cut off, the desired externalities will have not been achieved; if they are paid from public funds, the above objective will not be fulfilled. Therefore, a solution is still to be found.

**(8) Increasing bloc tariffs to identify payment capacity**

The increasing bloc tariffs were applied in all sectors. However, the methods differed. In some cases, when there was a remarkable lack of continuity, these mechanisms brought about claims regarding measurement quality.

**(9) OS and USO plans handled by the companies and greater information asymmetry between the regulator and the operator.**

There is less knowledge on the costs of reaching agents located in regions far away from the densely populated areas. This may open the doors to some sort of "moral hazard issue", with the companies exaggerating supply costs in these districts.

If there are available alternative technologies, their use to compete with the currently used technologies, limits the above effect. An example is satellite technologies for rural areas.

**(10) "Tailored" programmes**

The policy to be implemented may be of a general nature, setting fixed, homogenous rules among agents. However, this mechanism which seems ideal, at some time or another, comes across a wide variety of agents, located in more costly areas, with or without a job, pensioned or not, and among the latter, those who have additional income and those who do not.

The "tailored" programme is more expensive, but is probably the only feasible method to implement USO.

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**Table 1: POLICY INSTRUMENTS USED IN USO**

| Policy variables | Obligatory Service | Universal Service | USO |
|---|---|---|---|
| Tariffs | Current tariffs | Endogenous. A lower price is sought | Endogenous. Adjusted to the objective of maximizing number of consumers. |
| Investment (network extension) | Endogenous. Expanded according to demand | Current level of investment | Endogenous. Adjusted to the envisaged coverage level |

**Table 2**

| |
|---|
| Obligatory service arises: |
| *When there are location differences which raise supply costs for some consumers.<br>*When some consumers present "accessibility" problems, particularly those with physical or motor disabilities.<br>* When the degree of availability of certain services privately supplied is lower than the socially desired level (public telephones, special numbers, among others). |
| Universal Service or Universality arises: |
| *When the product is essential<br>*When there are groups of consumers that cannot gain access to a product or service at current tariffs.<br>*When the lack of supply or impossibility of gaining access limits consumers in other markets or activities (for instance, in the labour market)<br>*When the impossibility of gaining access also entails the exclusion of the consumers from technological progress and the evolution of modern societies (typical case in the field of communications). |
| Implementation of the Universal Service Obligation (USO) entails the following: |
| *In multiproduct industries, defining which products are included and which are excluded, that is to say, it is necessary to define which products are indispensable...<br>*Should access, use or a combination of both be included?<br>*Should a minimum level of consumption be defined or should the agents decide on this issue? That is to say, should an essential level of consumption be defined? |

**Table 3: Intensity of USO criterion**

| | Water | | Telephony |
|---|---|---|---|
| Indispensability | Very high | | High or medium |
| Consumption options with low social value | Relatively few | | Multiple |
| | USO > USO | | |

## Table 4: Estimate of User's Expenses in Services (income deciles)

| Decile | Income per capita (u$s) | Household Average Persons | Households' total Income (u$s) | Rate of Unemployment (%) | Monthly Fixed charges (u$s) | Monthly Variable Charges (u$s) | Total | Total Expenses as % of Total Income |
|---|---|---|---|---|---|---|---|---|
| 1 | 58.7 | 5.25 | 308.17 | 40.7 | 16 | 5 | 21 | 6.8 |
| 2 | 109.5 | 4.31 | 471.94 | 28.8 | 18 | 11 | 29 | 6.1 |
| 3 | 145.9 | 3.31 | 482.93 | 21.3 | 22 | 16 | 38 | 7.8 |
| 4 | 185.6 | 3.60 | 668.16 | 22.6 | 27 | 21 | 48 | 7.1 |
| 5 | 229.1 | 3.28 | 751.45 | 16.6 | 32 | 27 | 59 | 7.8 |
| 6 | 284.3 | 2.94 | 835.84 | 15.4 | 40 | 32 | 72 | 8.6 |
| 7 | 356.7 | 3.07 | 1095.07 | 12.2 | 49 | 37 | 86 | 7.8 |
| 8 | 470.3 | 2.78 | 1307.43 | 8.3 | 67 | 45 | 112 | 8.5 |
| 9 | 659.8 | 2.69 | 1774.86 | 6.2 | 80 | 57 | 137 | 7.7 |
| 10 | 1397.2 | 2.25 | 3143.70 | 6.1 | 95 | 69 | 164 | 5.2 |
| Prom | 323.9 | 3.75 | 1214.62 | 17.4 | 45 | 32 | 77 | 6.3 |

N.B.: Gas, Electricity and telephone bills were estimated according to the minimum and average monthly bill. Water and Sanitation bill was estimated for not-metered tariff.. It is assumed that variable expenses are a linear function of households' income.

## Table 5

| Decile | Household total income (u$s) | Fixed and Variable Charges (u$s) | Fixed Charges (u$s) | Total Expenses (u$s) | Total Expenses as a % of Total income | Total Expenses including connections, reconnection and arrears penalties (as a % of Household income) |
|---|---|---|---|---|---|---|
| 1 | 308.17 | 21 | 58.55 | 79.55 | 23 | 47 |
| 2 | 471.94 | 29 | 58.55 | 87.55 | 18 | 33 |
| 3 | 482.93 | 38 | 58.55 | 96.55 | 20 | 34 |
| 4 | 668.16 | 48 | 58.55 | 106.55 | 16 | 26 |

N.B.: The deciles with total income below the average salary (u$s 750) of the economy, were chosen for this comparison. Connection charges of all services were taken into account, assuming that they can be financed with 12 instalments (without changing financial costs). Fixed charges for Water and Sanitation were not included, since there exists a tendency to elliminate them, but a monthly infraestructure charge of $ 4 (120 instalments) was considered, as well as modest installation expenses for Gas).

**Table 6: Benefits and costs derived from the Universal Service Obligation**

| | Gains | Costs |
|---|---|---|
| Tangible and Intangible or Non-quantifiable | . Externalities<br>. Ethical<br>. Advertisements<br>. Non-profitable customers nowadays, profitable in the future<br>. Public products and consumption option<br>. Network gains<br>. Consumer capacity to participate in a market economy<br>. Access to infrastructure and gains from eliminating costly substitutes<br>. Scale or cost subadditivity | . Drop in privatization price<br>. Allocative costs if financed with public resources<br>. Include non-eligible individuals with perfect information. Monitoring and identification costs.<br>. Company sustainability and inter-generational equality<br>. Cream-skimming<br>. Induce access at a high cost if there is technological progress<br>.Pressure on inputs markets if quick investments are to be made<br>. Capital opportunity costs. |

Illustration I: USO COMPONENTS

UNIVERSAL SERVICE OBLIGATIONS { Obligatory Service & Universality

(USO)

Illustration II: Links between suplier and consumer

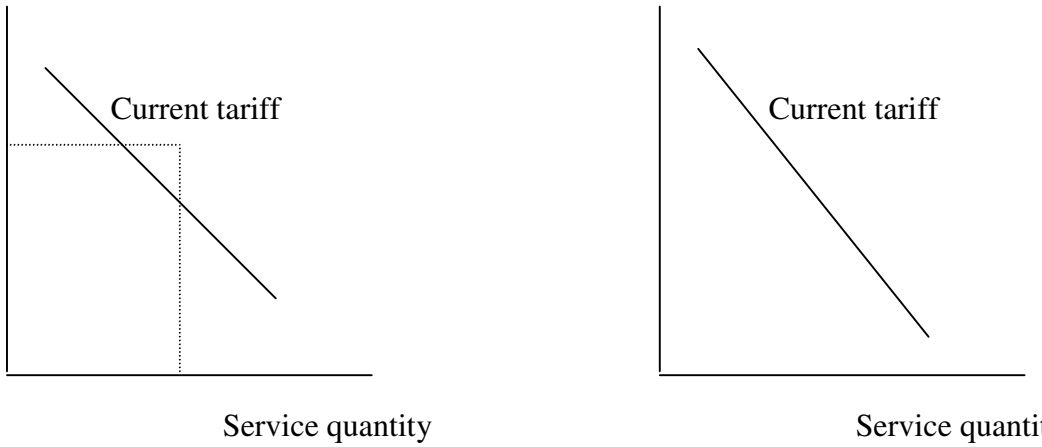
Obligatory Service is a unidirectional obligation when the consumer self-exclusion does not generate negative externalities for the community

Suplier OS Consumer

Obligatory Service is bidirectional when the consumers self-exclusion generates –even if only potencially negative externalities for the community or when its participation is requiered to finance network expansion.

Suplier OS Consumer

Illustration III: OS and Universality Criterion




The OS (left) criterion, aims at meeting all demand that appears at the current tariff. The Universality criterion aims at fixing a sufficiently low price so as to minimize self exclusion of consumers.

Illustration IV:

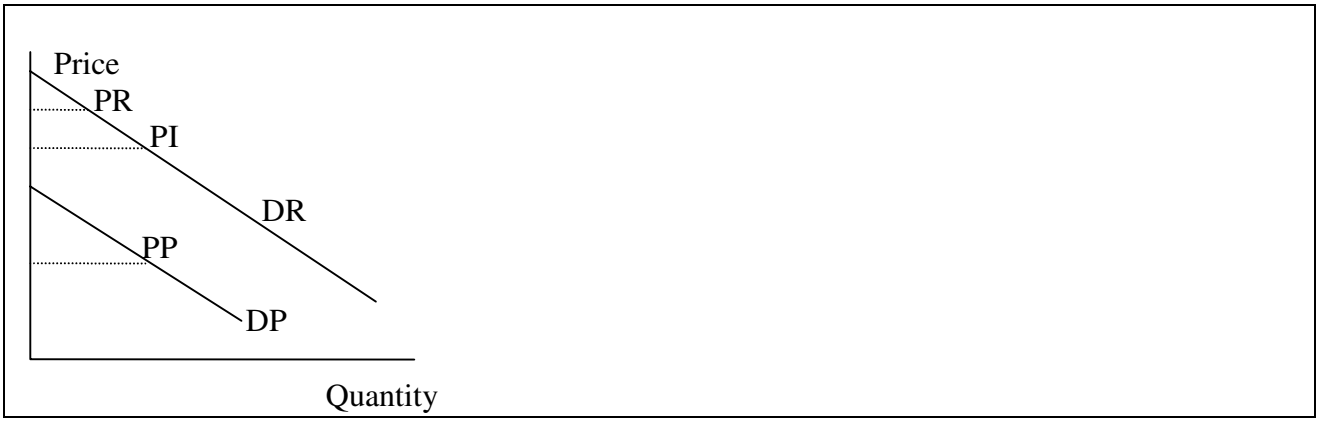



Illustration V:

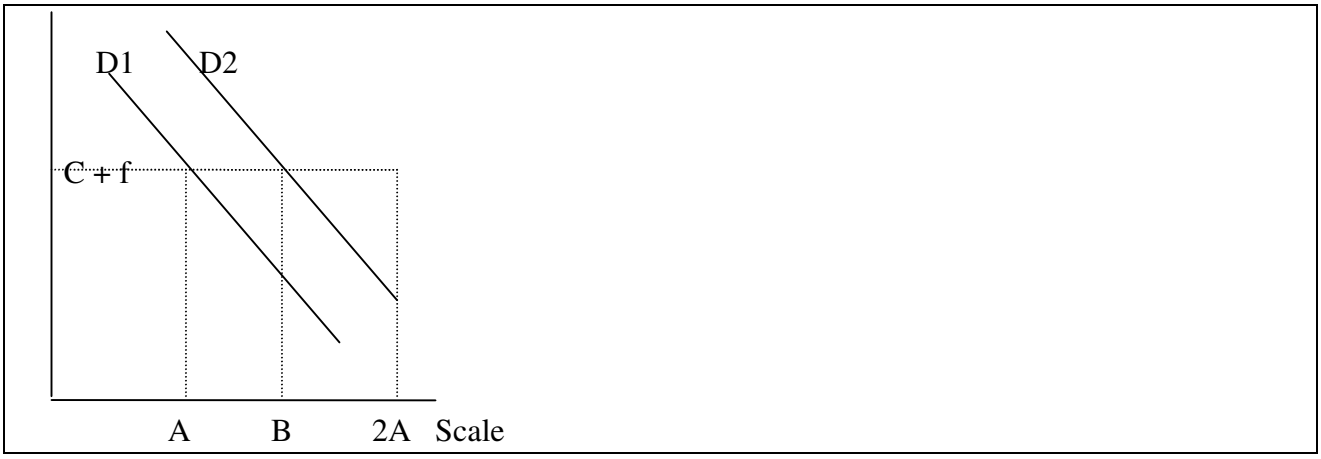


Illustration VI:

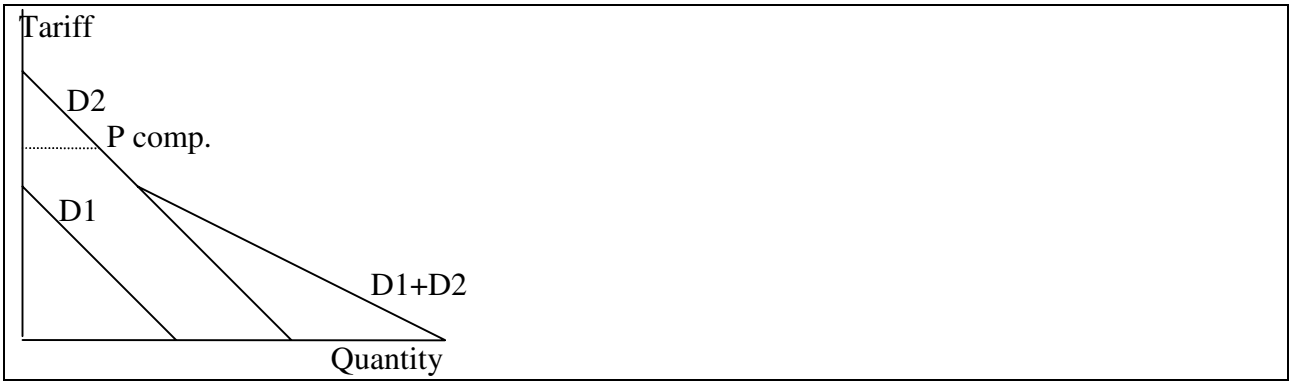
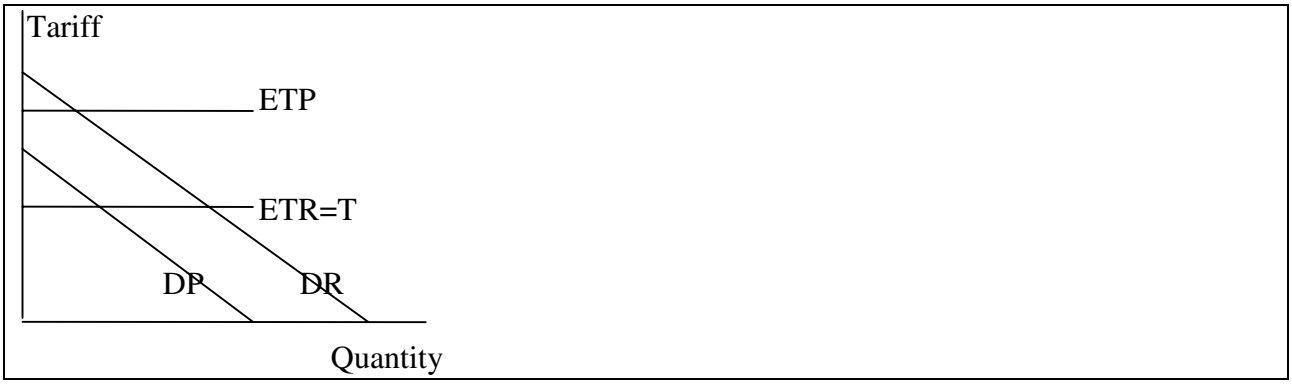



Illustration VII:



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